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ABSTRACT

This research report describes events and decision processes which encourage or inhibit the installation of an innovation in an educational agency--specifically, the installation of a coordinated information network in the New York State Education Department. To document the installation, personnel involved in the consideration of the innovation were interviewed, and a chronological narrative of events was constructed. In addition a questionnaire was developed and mailed to 31 cooperating institutions which had Educational Resources Information Center (ERIC) microfiche collections. Concepts from the change process were used to analyze the data. The Havelock linker model served as a frame of reference for discussing the roles of the information center in the state education department and cooperating institutions. Despite four drafts of the proposal to the Commissioner of Education, a coordinated information network was not fully implemented during the 31 months of this study, which illustrates the difficulty of installing a complex innovation in a bureaucratic organization. However, the decision to implement the network has been made. Several principles of innovation installation were supported by evidence in the study. (Author/SB)

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INSTALLING A COORDINATED INFORMATION NETWORK IN A STATE EDUCATION AGENCY:

A CASE STUDY OF THE DECISION PROCESS IN NEW YORK

NEW YORK STATE
Research Coordinating Unit

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY
1900 Kenny Rd., Columbus, Ohio, 43210

RESEARCH AND DEVELOPMENT SERIES NO. 67

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The Center for Vocational and Technical Education, an independent unit on The Ohio State University campus, operates under a grant from the National Center for Educational Research and Development, U.S. Office of Education. It serves a catalytic role in establishing consortia to focus on relevant problems in vocational and technical education. The Center is comprehensive in its commitment and responsibility, multidisciplinary in its approach and interinstitutional in its program.

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INSTALLING A COORDINATED INFORMATION NETWORK IN A STATE EDUCATION AGENCY:

A Case Study Of The Decision Process In New York

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PREFACE

The ability of an organization to remain responsive to the needs of society determines its effectiveness. This case study of a state education agency in the process of installing a pervasive innovation allows an examination of interpersonal relationships and change strategies and therefore contributes to The Center's series of studies on the change process in vocational and technical education.

The willingness of New York State Education Department personnel to open files and share experiences made possible the presentation of data in this report. Special credit goes to Dr. Louis A. Cohen, Director of the New York Research Coordination Unit and to the four representatives of the Boards of Cooperative Educational Services: Mr. Lawrence A. Wojcik, Mr. Herbert Lieberman, Mr. Robert Raddick, and Mr. William F. Farnsworth for spending a half day with the research team.

The preparation of this report was a cooperative venture between Gregory Benson and William Hull. Mr. Benson took the primary responsibility for conducting the survey to the 32 institutions cooperating in the information network. Also, he drafted Chapters II and IV. The copy has been revised several times to highlight specific incidents in the innovation installation process.

We appreciate the assistance of the following persons who reviewed the publication: Dr. Everett D. Edington, Director of the ERIC Clearinghouse on Rural Education and Small Schools; Dr. Jay Smink, Vice President of the Micro-comfax, Inc. of Camp Hill, Pennsylvania; Dr. Anna M. Gorman, Research and Development Specialist at The Center; and Dr. J. David McCracken, Research and Development Specialist at The Center.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

INTRODUCTION

This research report describes events and decision processes which encourage or inhibit the installation of an innovation in an educational agency. The innovation selected for this case study was the installation of a coordinated information network in the New York State Education Department. The magnitude of the State Education Department and the complexities of the innovation studied provided a dilemma for the analysis phase of the project: on the one hand, several opportunities were available for pursuing the logical consequences of the innovation; on the other hand, the intricacies of the situation resulted in considerable "noise" in the project and required careful sorting of significant details. It is our hope that the case study method of research allowed in the intensity of focus necessary for helpful generalizations to emerge. At the same time, the project team attempted to eliminate personal bias which may have filtered into the report.

This study was conducted during the time much of the decision-making occurred. Contact was made with the director of the New York Research Coordination Unit in February, 1970. The study was completed in September of the same year. Some of the data collected overlapped the study time frame, March, 1968 to September, 1970, but most of the information was obtained ex post facto.

The innovation chosen for study is vital to the welfare of vocational and technical education. Indeed, a coordinated information system is necessary for effective operation of any agency or program in education. Comprehensive information systems provide links for diffusing innovations into practice. This proposed innovation, a coordinated information network, provides access to document-based ERIC microfiche and has potential for the generation of priorities for research and development projects. The study examines several levels of the information network within the state, e.g., state, regional, and local, in order to describe a complete system with feedback from local to state level professionals.

No attempt has been made to present the need for statistical information as an input to management decisions. The authors recognize the value of this type of information. However, since the coordinated information network does not include the concept, it was not discussed in this report.

The primary thrust of this project was the investigation of the procedures for installing the system in the State Education Department. Hopefully, the delineation and analysis of such procedures in reference to change process concepts have yielded some

significant findings for anyone attempting to implement a similar idea at the state level.

Chapter One describes the rationale, objectives, and procedures of the study. Chapter Two provides background information to the reader and sets the stage for the comments to follow. Chapter Three focuses on the events and processes which occurred within the State Education Department. Organizational boundaries, communications, etc., were analyzed as they influenced the decision process. Chapter Four summarizes the responses from institutions cooperating in the project and assesses the condition of information services in the state. Striking differences are apparent in the way classes of institutions responded to information needs of user groups. Chapter Five lists the findings, implications, and recommendations of the study.

William L. Hull
Gregory Benson, Jr.

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ABSTRACT

This study addressed itself to the problem of innovation installation in a complex bureaucratic agency. The innovation studied was a coordinated information network which included the installation of an Information Center in the New York State Education Department with linkages to 32 collections of ERIC microfiche in cooperating institutions. Specifically, the study had the following objectives: (1) assessment of the context of information services in New York State, (2) documentation of events and activities associated with the installation of the innovation, and (3) analysis and interpretation of procedures used to install a coordinated information network.

The study includes a 31 month period of time beginning in March, 1968. However, The Center staff became actively involved in data collection beginning in February, 1970. Most of the data for the study was collected ex post facto from correspondence, minutes of meetings and other records. The principal investigators met on three occasions to collect information for the study. State Education Department personnel involved in the consideration of the innovation were interviewed, and a chronological narrative of events was constructed. This served as the data base for the study. In addition, a questionnaire was developed and mailed to the 31 cooperating institutions. The State Education Department microfiche collection was omitted in the survey. Concepts from the change process were used to analyze the data. The Havelock linker model served as a convenient frame of reference for discussing the roles of the Information Center and cooperating institutions. Despite four drafts of the proposal to the New York Commissioner of Education, a coordinated information network was not fully implemented during the 31 months of this study. This finding illustrates the difficulty of installing a complex innovation in a bureaucratic organization. Progress has been made in the establishment of communication linkages among the 32 institutions served by the network. But, complete installation of the Information Center in the State Education Department must rely on additional resources and support from influentials in the Department.

A summary of New York State ERIC service usage indicates that Boards of Cooperative Educational Services and Title III Centers were more likely to be oriented to the practitioner than are the universities or colleges. The graduate student was the most frequent user of the microfiche collections on the 19 college and university campuses.

The following principles of innovation installation were supported by evidence in the study:

1. Legitimization of the innovation by influentials in the system must occur prior to complete installation.

2. The innovation must demonstrate a comparative advantage over competing activities before it is readily accepted.

3. Incentives for adoption of the innovation should be clearly perceived.

4. The innovation installation should accommodate existing conditions whenever this can be done without limiting the effect of the innovation.

5. Persons affected by the innovation should be involved in the decision to accept, reject, or modify the proposed idea.

6. Innovations must be of sufficient magnitude to commit the adopting agency to the success of the program.

INSTALLING A COORDINATED INFORMATION NETWORK IN A STATE EDUCATION AGENCY:

A Case Study Of The Decision Process In New York

CHAPTER I

THE DESIGN OF THE STUDY

STATEMENT OF THE PROBLEM

The improvement of educational processes and systems depends on the availability of appropriate information for rational decisions. Information must be available in a form which can be understood by a decision-maker, and at a time appropriate to a decision. Many a school superintendent or classroom teacher has acted out of expediency because he was unaware of alternative plans of action. The quality and amount of information available to the decision-maker can be expected to influence the outcome.

In recent years, the investment in educational research has been increasing, amounting to over $60 million in vocational education research alone since 1963. Persons responsible for this investment have assumed the dissemination of knowledge to professionals in local school systems. This assumption has led many agencies of the federal government to require plans for disseminating results to target audiences. The result has been a multiplicity of systems for disseminating information, each with its own particular format and guidelines. An intergovernmental task force on information systems[1] recently reported a number of factors which hinder the development of efficient information flow:

(1) The lack of strong, central coordination at all levels of government over the development and operation of internal information systems,

(2) The fragmentation of grant-in-aid programs which are available to assist state and local governments in the development and operation of information systems,

(3) The lack of adequate coordination among separate federal and state programs which impose requirements for socio-economic data upon the lower levels of government, and

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[1] Intergovernmental Task Force on Information Systems. *The Dynamics of Information Flow* (Washington, D.C.: U.S. Department of HEW, Office of Education, April, 1968) 37 pages. (ED 019 985)

(4) The lack of appropriate consultation by federal and state agencies with lower levels of government prior to imposing requirements for information.

Research on the communication of information about innovation has been summarized by Havelock (1969) and Maguire (1970). The reader is referred to these sources and to Rogers (1971) for a review of the literature. A paper on the flow of information by Farr (1969) examines the role of knowledge linkers (change agents) using the Havelock linker model as a frame of reference.

In recent years, information systems have developed in State Education Departments, intermediate districts, and local educational agencies. Within the State of New York, at least four information systems have sprung up to meet the information needs of educational practitioners. The development of a comprehensive information system which effectively coordinates information sources could provide relevant information for educators' practical problems.

In a presentation to ESEA Title III leaders, Clemens (1969, p. 47) indicated need for a state information center coordinating and serving a series of local information centers located to serve a number of contiguous small districts or one large urban school district. He said, "The model of regional service centers or boards of cooperative educational services now exists and only waits to be adapted to provide information services . . . "

The advent in 1966 of the Educational Resources Information Center (ERIC) located in the U.S. Office of Education marked the beginning of a coordinated information retrieval, storage and dissemination system at the national level. Most states lag in the development of comparable state systems. The existence of 19 clearinghouses in the ERIC system serves to focus expertise on particular aspects of education. Information from research and development centers and regional laboratories filters through the clearinghouses to selected audiences.

Technology has played a part in the thrust for relevant educational information. The use of microfiche has facilitated the storage of vast numbers of documents in relatively limited space. The use of microfiche requires readers and reader-printers which represents an investment in equipment for school systems. These expenditures are barriers to widespread adoption of the system for some local schools. Also, local educators must be informed about the system and taught how to use the microfiche readers.

Effective utilization of the ERIC system by educators has been impeded by existing practice. Unlike agriculture and medicine, education does not have a scientific tradition. Education is perceived to have a weak knowledge base. Practitioners in schools

tend to rely on their own experience or the advice of others in the system rather than looking for tested answers to their problems. Educators have not turned to research for solutions to problems. An information system which links the practitioner to sources of validated information provides an avenue for improved educational practice.

State Education Departments are an effective catalyst for bringing about a coordinated network of information services. They have the responsibility for quality education in the states, and the resources to build an effective information system. However, the need for an information system must receive sufficient priority. As with many "good ideas," securing the attention of decision-makers in bureaucratic organizations represents a formidable problem.[2]

The federal government's investment in research and development centers, regional laboratories, and the educational resources information center can yield dividends only if tested knowledge finds its way into school systems through improved methods of instruction. State governments have begun to acknowledge their responsibility to tap the vast reserves of this federal information system. To do this, a locus of influence should be created within State Education Departments to bring about a coordination of information services within the state.

The decisions which must be brought about before a coordinated information center can be instituted and the events leading to these decisions form the focus of this report. Appropriate agencies must agree on the establishment of such a center. The center must be sufficiently comprehensive to deliver technical assistance not only to other offices within the State Education Department, but also to requests from agencies outside the department.

This study of the events and activities associated with the establishment of a State Education Department Information Center is a documented history which should be useful to other states contemplating a similar activity. Throughout the analysis, issues and problems of implementation are discussed.

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[2]There are many reasons for such a problem. The structure of most State Education Departments has been designed to run smoothly and efficiently. Attempts to direct attention to concerns which are not usually a part of the daily routine run afoul of prescribed activities and consistently receive low priorities from decision-makers. For a vivid discussion of how this tendency makes itself felt in practice, see Brickell (1961, pp. 38-9).

DEFINITION OF TERMS

1. Boards of Cooperative Education Services - BOCES are regional agencies which provide instructional services to local educational agencies.

2. Cooperating Institutions - These 32 schools, Title III centers, governmental agencies, colleges, and universities form the coordinated information network. Each institution agreed to open their ERIC microfiche collection to the public.

3. Coordinated Information Network - This phrase refers to the information services and institutions which form the innovation under study.

4. ERIC - The Educational Resources Information Center (ERIC) is a nationwide network of information clearinghouses. The system is administered through Central ERIC located at the United States Office of Education.

5. ERIC Service Unit - In September of 1969, the USOE Division of Information Technology and Dissemination appointed the Research Coordinating Unit as the Service Unit for the State of New York. This, in effect, centralized the acquisition of New York produced documents.

6. Reproduced Microfiche - This refers to the total number of microfiche reproduced for a given time period.

7. Requests Per Operating Day - This figure is ascertained by dividing the total number of requests (responsive and microfiche) by the actual number of work days for a given time period. Since reports are prepared monthly, this figure usually represents a monthly overall request index.

8. Responsive Dissemination - This refers to that activity which took place in response to written, phone or personal requests for information or service other than microfiche reproduction.

9. State Education Department Information Center - This agency will become the hub of the coordinated information network when it is installed. The activities of the ERIC Service Unit will be included among its duties.

DELIMITATIONS OF THE STUDY

This study of an information network installation in New York State was delimited by previous activities of the New York Research

Coordinating Unit (NYRCU). The NYRCU was the data source for the artifacts of the decision process: conference records, interdepartment memos, and letter correspondence. The 32 agencies in the information network had made a commitment to the system before this study was initiated. Requirements for membership in the network became important parameters for the data collection in this study. The key variable in the selection of agencies to cooperate in the information network was the presence of a collection of ERIC microfiche in their institutions.

The ERIC microfiche collections in the cooperating institutions functioned as a tracer for various change processes: equipment had to be purchased to make microfiche reading possible; the collection had to be maintained through a funding source; and sources and types of utilization were easier to identify than with most library references. Two focuses of activities consumed the attention of the investigators: the processes associated with the installation of the Coordinated Information Center in the New York State Education Department; and the events and procedures which linked the cooperating institutions into an information network.

The selection of the New York State Education Department provided some constraints on the operation of this study. However, resources limited the study to a single state. The study population was defined as the 31 institutions cooperating in the information network plus the New York State Education Department. New York provided an excellent backdrop for this study of decision processes for several reasons: an investment had been made by the New York Research Coordinating Unit in information dissemination activities; the well-developed state library system provided a frame of reference for installation decisions; and the State Education Department was of sufficient size to provide bureaucratic barriers and incentives to the installation of the innovation.

PURPOSE AND OBJECTIVES

The purpose of this study is to document innovation installation procedures within a state education department. This study of a coordinated information network extends beyond the department and into the institutions which had agreed to cooperate in the information network. This particular innovation study reflects problems inherent in a bureaucracy with specific reference to education information systems. The objectives of the study are as follows:

1. To document the events and activities associated with the installation of a Coordinated Information Center in the New York State Education Department.

2. To assess the context of information services in New York State, particularly as it relates to the utilization of ERIC microfiche.

3. To analyze and interpret procedures used to install a coordinated information network.

PROCEDURE

The case study was selected as the most appropriate approach to this study of decision processes in New York. It allowed the attention to detail and to intensive examination of events and activities necessary for insightful analyses. The project team recognized the limitations imposed by a case study on the development of generalizations. Therefore, conditions and circumstances in this study of New York were carefully noted.

New York was selected as the subject for the study because they displayed an abiding interest in educational innovation. A study of the State Education Department initiated by Brickell (1961) a decade ago represents one of the few formal attempts to consciously develop a structure for encouraging innovation adoption in school systems. This commitment to planned change led to the establishment of a Center on Innovation in Education in the State Education Department.[3]

This information network innovation, a discretionary effort of the NYRCU, provided an excellent opportunity to examine relationships between State Education Department (SED) personnel and professionals in local school districts. The innovation attempted to build a system which provides information services to practicing educators at various institutional levels in the state. This study of installation procedures included a look at interface relationships between vocational educators and nonvocational educators.

This study of the innovation, a coordinated information network, and its installation in the New York State Education Department includes a time frame of 31 months beginning in March, 1968. Most of the study is ex post facto except for the last eight months when researchers at The Center for Vocational and Technical Education became involved in studying the decision process.

The principal investigator contacted the director of the New York Research Coordinating Unit (NYRCU) to determine his interest in participating in this study. The details of the study were described and a letter of agreement was signed between the NYRCU

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[3]Carlson (1965, p. 4) documents New York's leadership position in the area of educational change.

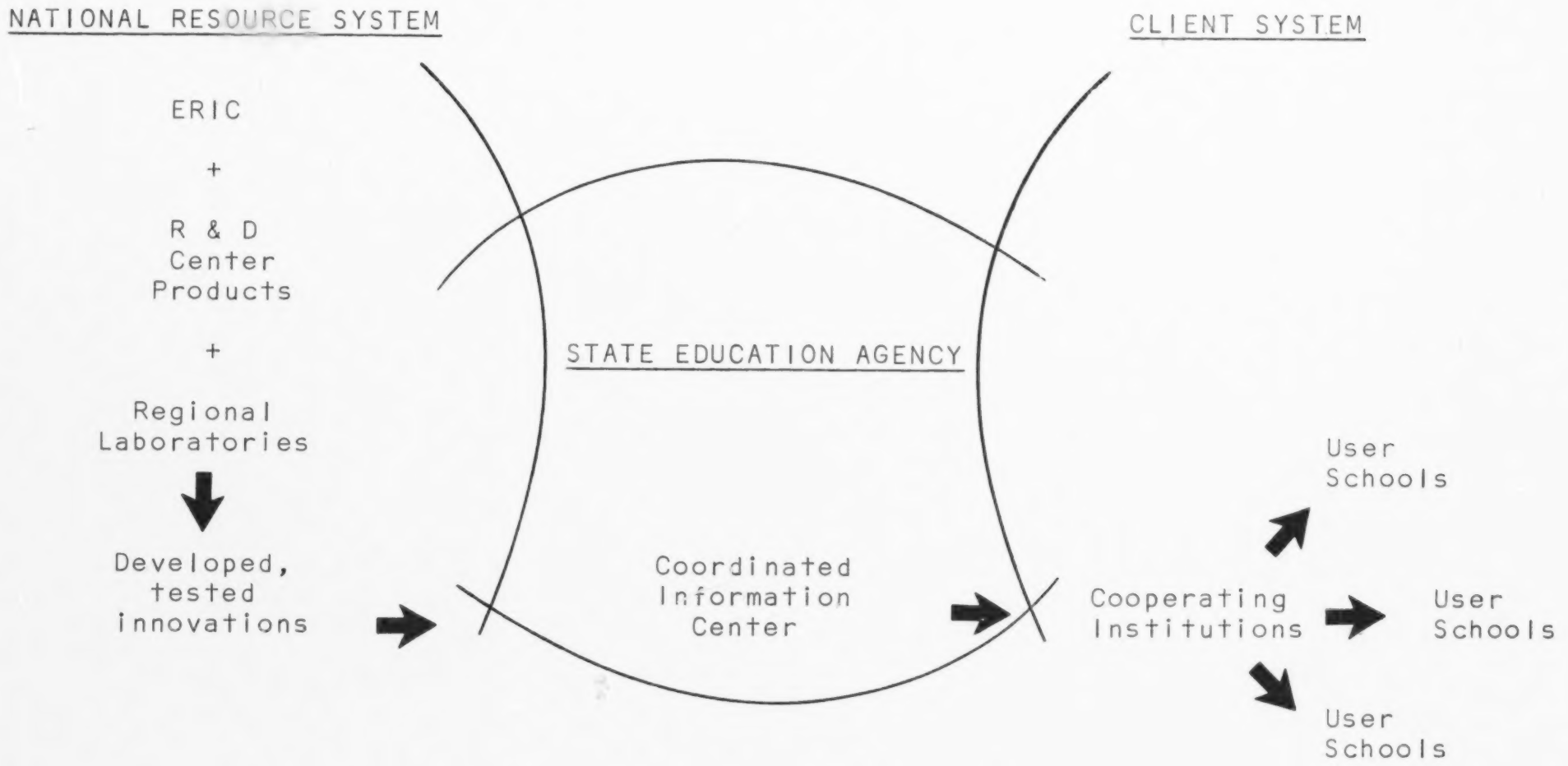
and The Center. Interviews were conducted with NYRCU personnel and other members of the State Education Department. Observations were written immediately after the interviews and used as a data base input to the study. A one-half day session was held with representatives from four Boards of Cooperative Educational Services (BOCES). This provided the project team with an opportunity to assess BOCES involvement in the planning and actuating of the coordinated information network. These interviews provided information complementary to the written correspondence and records kept in the Research Coordinating Unit.

Correspondence on the development and installation of the coordinated information network was made available to the project team. Private letters and minutes of committee meetings and conferences provided a chronological record of events as they influenced the decisions in process. Information from the NYRCU records was used to compare ERIC service requests for similar periods of time. The sources of these requests were not analyzed.

Responses from 31 institutions with ERIC microfiche collections were solicited and received through a mail questionnaire. See Appendix A for a copy of the questionnaire. The questions explored the cooperating institutions' perceptions of the information network and the degree of interdependence among institutions in the network. The institutions were grouped for analysis into four categories: BOCES, Title III Centers, State University Colleges and Universities, and private colleges and universities. The Center for Urban Education was grouped with the Title III Centers, and the Elmira City School District was grouped with BOCES. This allowed the researchers to trace the flow of information from research and development sources through the system to local school classrooms. Each response from each institution received equal weight in the analysis.

A generalized version of the Havelock model (1969, pp. 7-22) of linking roles was used to analyze relationships within the system. Two linking roles are discussed in detail by Havelock. The conveyor role results in information transfer from one source to another in a one-way linkage. This role is more simplistic than the consultant role which assists users in the identification of problems and resources for problem resolution. As a facilitator of knowledge utilization, the consultant usually is a temporary adviser who does not occupy a line position to the advisee. This allows a free flow of information in a relatively non-threatening atmosphere.

Figure 1 illustrates the Havelock linker model applied to the coordinated information network. The Coordinated Information Center in the State Education Department links the resource system to school districts within the State of New York. A secondary linkage within the client system is the relationship between the cooperating



Adaptation of Havelock's Linker Model

Figure I

institutions and the user school districts. This linkage can encourage or discourage use of the ERIC microfiche collection. Skilled facilitators of knowledge utilization should be stationed in intermediate school districts. According to Bushnell (1971, p. 153), these linkages in the Havelock model should provide the opportunity for a reciprocal (and equal) relationship between the client system and the resource system.

This report focuses on the utilization of ERIC microfiche as an example of decision process. In time, products from research and development centers and regional laboratories will become available for installation into appropriate school districts. The development of change agent skills in personnel in area schools and regional centers can provide the technical assistance necessary for an effective, efficient system of knowledge utilization.

The role of defender as described in the Havelock publication deserves special attention in this discussion of decision process. Defenders of the status quo may mobilize public opinion against the installation of an innovation. Critical, objective questions keep innovations from being adopted too quickly in the climates of crises which pervade many school districts. Defenders are "gatekeepers" to insure that only the best ideas become a part of the school system. Some authorities view this role as a mind set which is similar to the close-mindedness discussed by Rokeach (1960). But the reader is reminded of the very important function performed by this role: minimum standards of quality control are established by trial of the innovation. However, opinion leaders of a social system may exhibit tendencies toward defensiveness. When leaders demonstrate a strong investment in the status quo, it is very difficult to make significant changes in the system in the short run.

Another role of significance for new idea diffusion and installation is the role of the innovator. An innovator is defined by Rogers (1962) as an early adopter of new ideas. These people comprise a rather well defined subpopulation in any social group. They are more cosmopolitan in their relations with groups, have more education, have higher social class, and have more income than their peers.

LIMITATIONS OF THE STUDY

The case study procedure became a limiting factor for this study in two respects: the data collection was limited to brief interviews with the persons primarily responsible for installing the innovation, and written records of communications concerning the decision processes; and it was difficult to identify generalizations which were equally applicable in other states.

The correspondence file in the NYRCU office was reviewed for data relevant to the innovation installation. Conscious attempts were made to guard against the selection of documents by the investigators. The limitation of written correspondence, minutes of meetings, etc., is reflected in the data. Some written communication may have transpired between other interested parties which was not represented in this file. No attempt was made to include spoken comments since faulty memory could result in inaccurate data.

The internal validity of the study was threatened by reactive and interaction effects of the researcher's presence during part of the decision-making. One of the investigators was a prime mover in initiating the innovation. It was difficult for the observers to remain uninvolved. For example, in one session with State Education Department decision-makers, one RCU staff member found it necessary to remind the researchers "we are still in the process of deciding on this (information) center."

Another methodological limitation of the study was the mail questionnaire. Despite a 100 percent return from the cooperating institutions, most of the responses were based on the perceptions of the individuals supervising the ERIC microfiche collections. It could be argued that these individuals were in a position to make the best possible judgment concerning arrangements among the cooperating institutions and use of the microfiche collection. Yet, their replies were seldom based on hard data documented from office records.

Another limitation of the study was its inability to relate to the concept of a total information system in New York State. As indicated, the study focused on the document-based system only. On occasion, respondents alluded to the need for a management-based system with data processing equipment to be coterminous with a document-based system. It would have been desirable to have considered both systems in orchestration with one another. Unfortunately, time and resources did not allow such a study.

CHAPTER II

THE CONTEXT OF INFORMATION SERVICES IN NEW YORK STATE

Much education information in New York State is available through regional centers or educational service institutions such as area schools, colleges or universities. Many centers are also linked to centralized communications networks. The regions served differ as do the specific purposes of the various institutions; however, all have the main objective of providing more efficient, comprehensive and meaningful information or service to the individual at the local level whether he be professional educator, layman or student.

The information services provided by the institutions vary from the passive role of a depository for educational documents to an active information dissemination program which seeks selective users of information. Consultative services frequently assist educators in effective utilization of educational information.

Several of the educational institutions currently participating as members of an organized regional information network are developing plans to expand services and develop inter-region affiliations. Described below are those institutions and systems in New York State which influenced the development of a coordinated information network.

NEW YORK STATE EDUCATIONAL INFORMATION SYSTEM (NYSEIS)

The objectives of NYSEIS, as stated in the system design prepared by Price Waterhouse and Company in July, 1968, are the production of:

- An overall system design for a New York State Information System (NYSEIS) which is to provide a complete range of information and data processing services to school districts in the State of New York.

- A set of systems specifications for NYSEIS which is to be used as a basis for obtaining equipment proposals from computer manufacturers.

The NYSEIS system has general applicability in the area of data collection to the more than 750 school districts in the state. This is the basic objective when the system becomes operational.

The NYSEIS system deals with hard information which is basically statistical in nature. The three basic subsystems and their functions are listed below:

Student Subsystem

- Census
- Enrollment
- Attendance
- Grade Reporting
- Permanent Records
- Test Scoring and Analysis
- Student Scheduling

Personnel Subsystem

- Payroll
- Personnel Records
- Staff Directories
- Retirement
- Professional Qualifications

Financial Subsystem

- Budget Preparation
- Encumbrance Accounting
- Accounts Payable
- General/Revenue Ledger

The student and personnel subsystems are currently receiving the greatest developmental efforts. In the future, it is expected that a Facilities Subsystem might be developed and made an integral part of NYSEIS. In terms of hard or statistical information, the full implementation of NYSEIS will yield a most comprehensive information system with general applicability. At the same time, implementation of NYSEIS will eliminate the tedious task of statewide data collections currently done by the Basic Educational Data System (BEDS) housed in the State Education Department.

BASIC EDUCATIONAL DATA SYSTEM (BEDS)

At the present time, BEDS collects data directly from each school district. The data are collected once a year and most fall into one of four general categories: professional staff, pupils, curriculum and facilities.

Users of the BEDS system include educators, school board members, researchers, public officials, and the general public. Their purposes for obtaining BEDS data include use in negotiations, research, professional activities, and the establishment of a comparative base.

In addition to relieving BEDS of the statewide data collection task, NYSEIS will afford users more detailed information which will be stored centrally with BEDS. This will allow BEDS to become more user oriented, to provide more efficient and comprehensive data, and to anticipate and fulfill state and federal statistical information needs.

NYSEIS and BEDS are discussed to point out the level of sophistication and planned organization that exists in New York State relative to "hard" or statistical information collection, storage and retrieval.

Most state educational agencies have fairly sophisticated and effective hard or statistical information collection and dissemination systems as compared to systems dealing with "soft" or research, demonstration and project-generated information. This may be due in part to the federal requirements placed on each state for yearly statistical information.

In many instances, the effective use of the hard information is dependent upon access to and utilization of soft information. For instance, certain specialized teaching techniques as described in a "soft information package" may be limited in effectiveness or feasibility by such parameters as teacher/pupil ratio, per pupil expenditure, facilities or scheduling. This necessitates access to both program and statistical information bases if implementation is to be efficient.

The remaining networks identified in the following sections are those which normally deal with soft information. The networks could become information access points for local educators or, even more importantly, catalysts for effective information utilization and change within the local schools.

BOARDS OF COOPERATIVE EDUCATIONAL SERVICES (BOCES)

The BOCES are regional agencies which provide instructional services to local educational agencies. The primary function of BOCES is the assumption of services which can be more effectively and economically performed on a shared basis. The members of BOCES boards are elected from the representatives from the boards of the component school districts. Usually, BOCES district lines are determined by geography, student population, etc.

Component public school districts contract for specific services which include vocational education, special education, updating of professional staff, etc. In many cases, a professional library is maintained by the BOCES for use by educators in all component districts.

The BOCES appear to be flexible and adaptable institutions for linking information to local educational agencies for:

1. periodically disseminating priority program or funding information to selected individuals such as department chairmen or local administrators,

2. providing in-service training in the use of educational resources such as ERIC, special curriculum sets and audiovisual materials,

3. allowing educators access to collections of research and project-generated information for use in overcoming classroom problems or as an aid in personal educational endeavors, and

4. providing meaningful assistance in implementing or utilizing the information available in light of regional economic and educational conditions.

The service orientation of BOCES is an important consideration when examining educational agencies for characteristics required of an educational information "linker" capable of assisting local educational agencies in the application of education program or research information.

SPECIAL EDUCATION INSTRUCTIONAL MATERIALS CENTER (SEIMC) NETWORK

The SEIMC network is, in essence, a region within a national network functioning primarily around the ERIC Clearinghouse for Exceptional Children. The primary function of the SEIMC network is the storage and dissemination of information and teaching materials which emanate from the ERIC clearinghouse.

The New York State network is based on three regional support centers which currently exist in Buffalo, Albany, and New York City. In addition, 30 additional associate centers have been established which constitute a primary network covering the entire state.

A "secondary network" has been established which links the three schools for the blind, the 10 schools for the deaf, and the Human Resources School. In addition, an affiliation with the

public library system within the regions and the State Library in Albany is anticipated so as to make the vast collection of educational resources within the library system available through inter-library loan. The well-developed SEIMC network gives clear evidence of the subsystems which began to align themselves with specific ERIC clearinghouses.

TITLE III REGIONAL CENTERS

The Title III regional centers are primarily concerned with the stimulation of innovative practices, the dissemination of information pertinent to educational improvement, the in-service development of instructional staff, and the encouragement of research and development activities in local schools.

In terms of program orientation and institutional affiliations, the regional centers vary widely. Some act as liaisons between local educational agencies and college or university councils while others are closely related to the BOCES. Regardless of the program emphasis and organizational relationships, the regional centers serve as catalysts in the development and undertaking of area cooperative projects.

Five regional centers subscribe to the ERIC microfiche and serve educators in their area. No defined information network or pattern among regional centers exists, but task forces have been set up to look into this possibility.

HIGHER EDUCATION INSTITUTIONS

In terms of fulfilling a linking role in an educational information system, it would seem logical that the higher educational institutions would be a natural selection. Twenty-two of the over 200 private and public institutions of higher education subscribe to ERIC microfiche. In addition to ready access to ERIC and many other educational resources, the colleges and universities have as staff members individuals with the expertise to assist LEA's in utilizing or implementing information. Teacher educators would be a prime example of such expertise.

Many universities have policies which limit access to higher educational resource materials to individuals with student or faculty status. Such a restricted service policy limits the impact of educational information on local educational agencies. Attempts are being made to initiate an open door policy through a consortium of institutions.

LIBRARY SYSTEM

The public libraries in the state comprise 22 library systems, including more than 725 chartered libraries with approximately 300 branches. These systems provide a unique and efficient link between the individual user and the total resources of the statewide library system.

Twenty-one of the library systems have a central library that is equipped with a teletype or "TWX" machine. The remaining central library system has a daily messenger to the State Library in Albany. In addition to the central libraries, there are numerous colleges and universities that have teletype machines which give these institutional libraries access to the state collection regardless of location.

Recently, the state has been divided into nine "Regional Reference and Research Regions," commonly referred to as "3R's" Regions. This division was accomplished to effect coordination among the many types of reference and research libraries in the state. Included among these special information centers are private, cultural and scientific institutions and associations, historical societies, professional associations, government agencies, and business and industrial libraries. Public and private colleges, universities and professional schools are also participating.

In addition to the 3R's, the New York State Inter-Library Loan (NYSILL) network also provides for the loan of books, periodicals, photocopies, microfilm and microfiche. The NYSILL network is also centralized through the New York State Library in Albany and has handled as many as 14,500 requests in one month.

Further regionalization is accomplished through groupings of university libraries which are designed to meet the increasing needs of faculty and students for more and varied research materials. Longrange plans include the establishment of a computerized system allowing each library to have access to the bibliographic records in the other libraries.

The library superstructure is designed with the user in mind. The existing organizational relationships are such that the "mechanics" of dissemination on a statewide basis already exist. Even though the raw mechanical dissemination of information is only one phase of a total information utilization cycle, it can be the most difficult to establish, coordinate, and maintain.

An indication of the library service now offered to educators in New York State is the xeroxing service offered by the State Library. A teacher may go to the school librarian and request up to 24 printed pages of journal, periodical or other noncopyright

material free of charge. That request is forwarded directly to the State Library. If a request originates within any of the 22 library systems, the request is forwarded to the system's central library and teletyped to the State Library. The turn-around time for requests of this nature is from one to four days.

This service does not exist solely for the field of education, but includes medicine, law and any other professional or technical field, providing the information is available in the state collection and the request is forwarded through the appropriate channels.

The above discussion illustrates the complex relationships existing among the regional service institutions, many of which deal with the dissemination of educational research or project-generated information.

NYRCU DISSEMINATION ACTIVITIES

During the period prior to the decision to establish a comprehensive ERIC based system, the New York Research Coordinating Unit was involved in dissemination activities revolving around occupational education research and project information.

Dissemination of occupational education materials was accomplished through the content bureaus (Trade and Industry, Technical, Agriculture, Health, Home Economics, Business and Distributive Education) to local individuals identified by content bureau chiefs. Dissemination followed the typical "mass mailing" procedures and was originally conceived of as a systematic one-way flow of information.

CHAPTER III

INSTALLING AN INFORMATION CENTER IN THE STATE EDUCATION DEPARTMENT

THE STATE EDUCATION DEPARTMENT

The State Education Department of the University of the State of New York provides an excellent setting for a study of decision processes. The department contains large numbers of people and agencies including the following divisions: Intercultural Relations in Education, Vocational Rehabilitation, Educational Testing, Research, General Education, Health, Physical Education and Recreation, Occupational Education, Continuing Education, Pupil Personnel Services, Handicapped Children, School Supervision, Educational Management Services, Educational Facilities Planning, Educational Finance, Higher Education, Teacher Education and Certification, Professional Licensing Services, and the Division of Library Extensions. These titles are not exhaustive of the divisions in the New York State Education Department, but they are representative of the types of services and functions provided by this department. Figure 2 shows an abridged version of the State Education Department Organizational Chart. The divisions and bureaus exercising major influences on the installation of a state network of information services have been abstracted and placed in position by relationship to one another on this chart. Titles for administrators of agencies are indicated in some cases.

In addition to the divisions indicated on the chart, two agencies deserve special attention in this discussion: The Center for Planning and Innovation, and the State Library.

The Center for Planning and Innovation recommends new ideas to the Commissioner of Education and is responsible for certain planning functions within the department. The Center administers Title III programs of the Elementary and Secondary Education Act of 1965 for the State of New York. This title includes Projects to Advance Creativity in Education (PACE) which is designed to encourage innovation and exemplary application of educational knowledge.[4]

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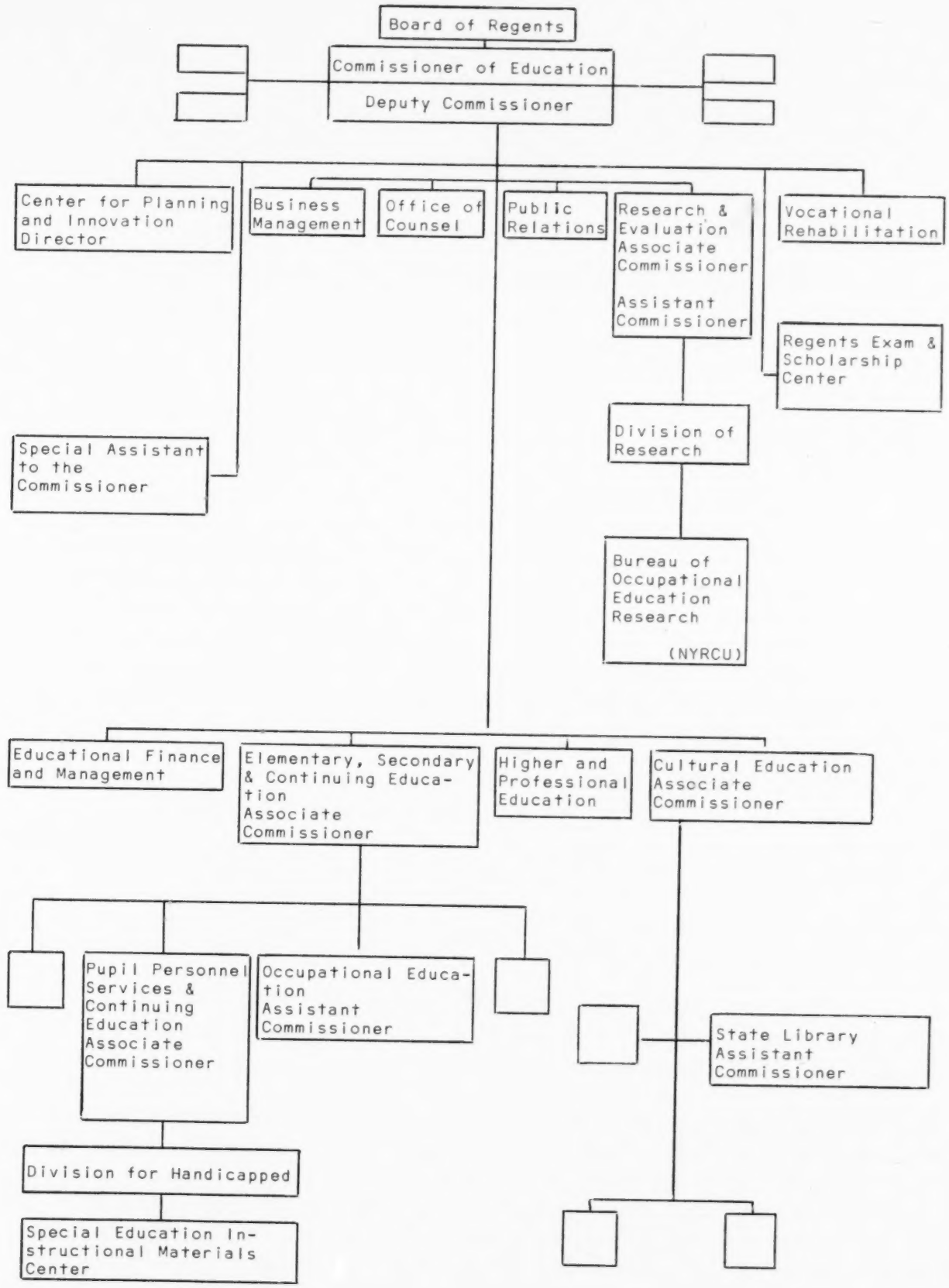
[4]For more information, see U.S. Department of Health, Education and Welfare, Office of Education, *Profile of ESEA* (Washington, D.C.: Government Printing Office, 1967).



An Abridged Version of the State Education Department Organizational Chart

Figure 2

Sixteen regional centers exist in the State of New York. Five of them have ERIC collections and have agreed to become a part of the network being studied. Each regional center includes dissemination as a function. One dissemination specialist at the Center for Planning and Innovation is in charge of disseminating information from Title III programs. The Title III centers and the Center dissemination specialist represented the major coordination of information at the time when a dissemination specialist was employed by the New York Research Coordinating Unit.

The State Library System of the State University of New York has one of the most extensive communication structures of any library system in this nation. The New York State Inter-Library Loan Network (NYSILL) and the State University of New York Biomedical Network are parts of the system which extends to institutions outside the state, including the Harvard University collection and the National Library of Medicine. A smaller network of communication links serves New York City, with its base of operation at the downtown medical center. A third network for medical literature is a regional one sponsored by the National Library of Medicine. Requests for information may originate in any library within the state system. They filter through appropriate channels with local agencies supplying available materials. Libraries located at Cornell University, Columbia University, and the New York Public Library represent the final referral stage in the process. In the field of education, the final referral source is the Teacher's College Library at Columbia.

The director of the State Library recognizes that the State University of New York (SUNY) Library System has operated primarily as a "request-based system." He would like to see the library system become more aggressive in its solicitation of clientele information needs. He is eager to have librarians assist in the process of diagnosing questions and identifying relevant documentary materials for information users. The State Library System includes ERIC collections located in college and universities which have become a part of the coordinated information network being studied. These collections are maintained with state funds. The library director indicated that as far as he knows, there has been no release of resources, such as travel funds or staff time, to pursue a vigorous public information campaign promoting the ERIC microfiche collections at the regional or local level.

A third state department agency, The Division for Handicapped Children, has developed information links in the ERIC system and is part of the national network which was described in Chapter II.

Unlike many research coordinating units in vocational education, the NYRCU is administratively responsible to the Division of Research. Staff members in the Office of Occupational Education are located in a separate building and are administratively

responsible to a different assistant commissioner. This bureaucratic separation of the Bureau of Occupational Education Research from the Office of Occupational Education makes generalizations to other Department of Education structures difficult. The Bureau of Occupational Education Research, also known as the Research Coordinating Unit, has grown from three professional staff positions in 1965 to eight professional staff positions in 1970. Of this staff, five people are directly concerned with the dissemination of information. One member of the staff directs the dissemination effort; another staff member is concerned with Putting Research into Educational Practice (PREP) materials;[5] another staff member is the contact person for the computer retrieval program. Two part-time staff members answer communications, search the information system, and process microfiche reproduction. This staff has been assembled as vacancies appeared within the Research Coordinating Unit. The Research Coordinating Unit activities which resulted in the need for this staff are the focus of this report. Events and procedures relating to specific decisions concerning the information network are the subject of the following section.

THE UTILIZATION OF INFORMATION

In late July of 1968, the first RCU newsletter was distributed. The newsletter was primarily a vehicle for announcing the availability of research documents and increasing the awareness of RCU information services. The RCU services included the lending of AIM and ARM microfiche,[6] and the hard copy printing of documents from microfiche for those who did not have access to a microfiche reader or reader-printer.

It became apparent that research and project-generated information were not being utilized to any great extent. From January 1, 1968 to September 30, 1968, the greatest number of requests per operating day, calculated on a monthly basis, was 2.1. This lack of usage, coupled with the "low impact potential" proposals for discretionary award funding received by the RCU during fiscal year 1969, led to the realization that dissemination must be more than a one-way operation and, in fact, is merely part of a much broader information cycle. This realization and suggested solution were spelled out in a short paper entitled "Ideas to

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[5]The PREP program initiated by the U.S. Office of Education describes research findings on practical problems in the language of educators.

[6]*Abstracts of Instructional Materials* (AIM) and *Abstracts of Research Materials* (ARM) are produced by the ERIC Clearinghouse on Vocational and Technical Education.

Implementation." The main theme of this paper was to outline a plan whereby ideas for research projects would concern themselves with highly relevant problems so as to insure ultimate utilization of the completed project. This was the first draft of the proposed coordinated information network. The plan consisted of four major phases:

1. Identification of relevant problem areas and of those individuals most familiar with or best equipped to deal with them.

This phase was accomplished through conferences with content bureau personnel and ultimately led to formal group conferences with local practitioners in the areas of Business Education, Distributive Education and Home Economics. The results of these conferences were twofold: (1) significant problem areas were identified, and (2) distinct lines of <u>two-way</u> communication were established.

2. Promotion of research projects dealing with identified problem areas.

The solicitation of occupational education research proposals was directed to those individuals identified by content bureau staff and, in some cases, these were individuals that had participated in the conferences which originally led to problem identification.

3. Initiation and completion of occupational education research proposal projects.

The RCU role in this phase was the insurance that contract commitments were met and appropriate changes were made if they were deemed necessary.

4. Dissemination of completed research projects.

Hopefully, the research generated by this plan would be useful to other Research Coordinating Units which are considering the installation of an information network.

The lines of communication proposed in this document for phase one are ideal lines of dissemination and add an element of selectivity to dissemination that had previously been rather indiscriminate.

The dissemination phase also included face-to-face attempts to promote the implementation of research findings as specific operational changes.

This "Ideas to Implementation" paper represented the initial step in implementing the goals of a recommendation made by the 1968 Advisory Council on Vocational Education which stated, "research must not be limited to merely operational problems, but research which does not affect operations is of little value."

This philosophy of identification-generation-dissemination was prevalent in the RCU prior to any attempt to consider or actively develop a more comprehensive educational information system. This atmosphere of a total system, coupled with the ongoing and potential services available through the BOCES, Title III regional centers and higher educational institutions, as well as potential linkages with existing systems such as the SEIMC, BEDS, NYSEIS, and, most importantly, the State Library, set the stage for the decisions and resultant changes investigated by this study.

EVENTS LEADING TO THE INNOVATION PROPOSAL

This case study of a coordinated information network began on March 1, 1968 with the appointment of a research aide to the New York Research Coordinating Unit. The duties of the research aide involved reporting statistical data to federal authorities and managing Occupational Education research programs. A newsletter was initiated by the aide which provided information to vocational education agencies throughout the State of New York. This newsletter continues to be published today. The aide and the director of the Research Coordinating Unit discussed the information needs of vocational educators in New York. A decision to develop a "total" information system serving all educators rather than a selected information system for only vocational educators was made within the Research Coordinating Unit and was endorsed by superordinates.

The next step was to determine the propriety of devising a system for serving the information needs of all agencies within the State Education Department including vocational educators. To do this, the RCU staff took a brief survey of dissemination efforts already underway in bureaus of the State Education Department. The interviews with at least 20 bureau chiefs took approximately one week's time. About a half hour was spent in each bureau chief's office acquainting them with the information system idea and assessing current information dissemination efforts; at no time was a collective meeting of the chiefs called. Only one division in the State Education Department, The Division for Handicapped Children, had a communication channel to an ERIC clearinghouse. This division was linked to the Clearinghouse for Exceptional Children in Arlington, Virginia. The appraisal of the survey results gave the NYRCU staff the green light to proceed on plans for a department-wide information system.

As indicated, the first tangible form of the information system occurred in July, 1968 with the publication of a paper entitled "Ideas to Implementation." This paper described the relationship of activities and events which should take place between the New York Research Coordinating Unit and professional groups of vocational educators, e.g., vocational agriculture teachers, home economics teachers, etc. The operating bureaus in the Division of Occupational Education were described as a source of ideas for problems which should be researched by the NYRCU. A case was made for the NYRCU to become a source of expertise not only for the dissemination of information services, but for the implementation of these new ideas as well. A rationale was established to devise a pilot program of information services to be established in Boards of Cooperative Educational Services (BOCES) on a limited scale.

To operationalize this pilot program, the $20,000 discretionary award funds provided to the NYRCU under Public Law 90-576 were used to purchase four microfiche collections and four reader-printers for each of the BOCES units. The expenditure of these monies assured the NYRCU of some impact on vocational education and served as an incentive for local educational agencies' involvement in the program. An important ingredient in locating these microfiche collections in BOCES was their proximity to local school districts.

During the Fall of 1968, meetings with teacher educators and professional teacher organizations, such as the Seminar for Business Educators, were held. At these meetings, the information dissemination system was explained, educators became acquainted with potential capabilities of the system, and they participated in "hands on use" of microfiche readers.

Other events which influenced the decision to install a network of information services in New York included an overture to state divisions of vocational and technical education by The Center for Vocational and Technical Education which is located at The Ohio State University. During a national meeting of staff members from research coordinating units, the director of The Center for Vocational and Technical Education discussed The Center's intent to initiate a pilot project in dissemination systems.[7] Informal communication took place between The Center and various interested research coordinating units for about one year. In May of 1969, a formal invitation went to selected states, including New York, to become a part of the pilot program to develop an exemplary vocational-technical information dissemination system.

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[7]This project resulted in a Guide by Taylor and Magisos (1971).

The staff of the NYRCU came to The Center and presented a proposal to become a part of the pilot project.[8]

Concurrent with the plans prior to the formal invitation for a national pilot project in dissemination systems, a study was being conducted by the Title III agency within the New York State Education Department. In November of 1968 this study of dissemination systems in the State of New York was released. The NYRCU staff spent some time discussing this document with the principal investigator of this Title III project. Meetings took place among Research, Title III and State Library representatives to discuss an overall "umbrella type" network of ERIC collections and possibly other educational resources.

This Title III report and the general interest in a network system among State Department personnel spurred the formation of two grass roots task forces. The task forces were staffed by people from various Title III regional educational centers for the purpose of surveying possible content and dimensions of a standardized information network. Each task force raised questions about an educational information network; one proposed a diffusion model with a four stage information search and retrieval strategy. At the request of the NYRCU staff, the Title III Educational Information Network task force prepared a statement to support a proposal entitled a "State-Wide Unit for Resources in Education." This proposal, the second draft of the coordinated information network, was submitted to the deputy commissioner on April 1, 1969. This statement is in Appendix C. The committee continued to meet throughout 1969 and, as a result of an October 30 meeting, a letter dated November 3, 1969 was sent to committee members from the NYRCU staff with materials explaining state library system services and capabilities as they related to their mission.

In addition to the Title III task force dissemination study, the Center for Planning and Innovation in the State Education Department received a proposal from the Listfax Corporation to research and develop a statewide educational information system. Listfax, a private corporation, was invited to write the proposal. The proposal suggested a pilot study to test the feasibility of an educational information system for supplying users' information needs through a dial access telephone system. A meeting was held for the Listfax representatives to discuss their proposal with State Education Department personnel on June 12, 1969. The proposal included provisions for handicapped persons and for vocational educators as a pilot operation. Some challenges were

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[8]The personal presentation was made to emphasize the point that the NYRCU service would include all of ERIC and would be for all NYS educators. This was important since the pilot program was designed for vocational education.

raised concerning the statistical services which could be provided from this system. Also, there appeared to be a need to develop some interface between the information specialist and professional educators. The meeting was adjourned with no vote on the acceptance of the proposal and no time set for another meeting with the Listfax representative. The outcome of this meeting is significant since the Listfax proposal represented the greatest single attempt to establish a network of information services being proposed at this time.

Any discussion of the barriers associated with an innovation's adoption must examine tangible alternatives to the proposed innovation. The Listfax proposal which was presented to the State Education Department in June of 1969 constituted a threat to the coordinated information network. The Listfax proposal would have substituted for the innovation being studied. It is significant to note that neither the commissioner of education nor the deputy commissioner were present during the discussion of this proposal. Also, the discussion was terminated without any kind of formal decision on the fate of the proposal. Apparently, there have been no efforts to bring this consideration before the total State Education Department since that meeting. Also, few people in the State Education Department knew about the Listfax proposal in advance of the meeting. Thus, the knowledge base for considering this idea was quite limited at the time it was presented.

During the Spring and Summer of 1969, the RCU staff spent time on the pilot dissemination project: determining the location of ERIC collections, selecting BOCES to receive the four additional collections, and making presentations on the ERIC system to local groups of teachers and administrators. In August of 1969, a revised proposal for a state network of information services was published.

This proposal, entitled "A State Design for Educational Research and Resource Utilization" (ED 031 821), dealt almost exclusively with the development of a statewide system of information services. The design included provision for a statewide ERIC Input Agency which would review documents and send appropriate ones to central ERIC. In addition to the ERIC Input Agency, a program for technical assistance to users of information was proposed. Persons located at regional or local information centers would function as "county agents" in diagnosing user's questions, directing them to the most appropriate sources of information, and assisting users in applying the results.

The NYRCU was designated by the U.S. Office of Education, Division of Information Technology and Dissemination, as the ERIC Input Agency for the New York State Education Department. An announcement to this effect was sent to all ERIC clearinghouses on September 10, 1969. See Appendix C for a copy of this letter.

The ERIC Input Agency for the State Department of Education obtains documents from three sources:

1. State Education Department documents published by the Department,

2. Documents produced by agencies under contract to the Department, and

3. Locally produced documents which have no affiliation with the State Education Department.

The ERIC Input Agency centralizes the acquisition of New York produced documents and encourages their flow into the system. The NYRCU, functioning as the ERIC Input Agent, sends documents to central ERIC. A "reply card" is forwarded to the clearinghouse with the document in order to inform the NYRCU of the disposition of the document. The NYRCU activities were provided special attention in an article in the December 15, 1969 issue of *ERIC User Notes*:

> The State Education Department has taken the leadership in organizing the (ERIC microfiche collection) centers in a State-Wide System. Perhaps the New York State Model may suggest lines of development in your state.

Attached to the USOE publication was a pamphlet describing the information service network of the 26 cooperating institutions.

Following these activities, the coordinated information network proposal was revised. The proposal, entitled "State-Wide Unit for Resources in Education," was reviewed by persons within the NYRCU and presented to the Deputy Commissioner of Education at a meeting in April, 1969. Persons present at this meeting included representatives from Title III, Research and the State Library. The deputy commissioner appointed a committee to prepare a document for the commissioner which would serve as a formal proposal. It took almost a year to prepare this document. It was submitted by the Division of Research to the commissioner on April 1, 1970.

The 1970 proposal, entitled "A Proposal for a New York State Educational Resources Information Center Unit," includes much of the information contained in an RCU revised 1969 draft entitled "A State Design for Educational Research and Resource Utilization." Reference is made to an outline for state dissemination capability developed by the director of the USOE Division of Information Technology and Dissemination. This outline was attached in draft form. This proposal has led to the recent State Education Department activities discussed in the Postscript. See Figure 3 for a listing of the drafts of this proposal. These four drafts of

Date	Title
7/29/68	"Ideas to Implementation"
4/4/69	"State-Wide Unit for Resources in Education" (SURE)
8/15/69	"A State Design for Educational Research and Resource Utilization"
4/1/70	"A Proposal for a New York State Educational Resources Center Unit"

Drafts of the Innovation Proposal

Figure 3

the innovative idea extending over a 20 month period of time indicate the persistence needed to influence an organization the size of the New York State Department of Education.

AN ANALYSIS OF DECISION PROCESSES

This analysis transcends the chronological order of events which influenced important decisions. The discussion focuses on activities and change processes which influenced decisions.

Principal Actors. Any social system is built around the personalities who occupy leadership positions. In this case, the innovator, the research aide from the NYRCU, worked closely with those persons in the State Education Department who have an interest in education information systems. The director of the Division of Research took an interest in the proposed innovation in the hope that it would provide a feedback loop to the dissemination of research findings. The research aide's strong personality probably accounts for much of the initiative in this project being seized by the Division of Research. The bureau chief in charge of the NYRCU was willing to play a supportive role towards this innovation, allowing time and resources to move in the direction of a comprehensive information system even during the early stages when the activity was funded exclusively from vocational education monies. The Assistant Commissioner for Libraries was present with the director of the State Library during a meeting observed by the researchers during which the Assistant Commissioner played a relatively passive role supporting the director of the State Library whenever possible. Clearly, the director of the State Library system was actively involved in support of the innovation. Probably, the State Library director, more than any other person outside of the NYRCU, was responsible for much of the progress observed in the installation of this innovation.

The State Library system is vast with many resources at its disposal. It is a document-based system, relying on requests and referrals for much of its activity. The director is interested in making the system more dynamic and aggressive in soliciting requests for information. Thus, the innovation is perceived by him as desirable, advantageous and compatible with the existing library structure. It may be worthwhile to comment on the fact that a good working relationship exists between the staff of the NYRCU and the director of the State Library. Much of this rapport developed when the research aide was employed on a project associated with the State Library system prior to his appointment to the NYRCU.

Another strong personality who holds an important position in the State Education Department is the director of the Center

on Planning and Innovation in Education. The Title III programs are administered from this Center. The Title III program had begun to initiate plans for an information network system prior to the RCU's interest in dissemination, and a dissemination specialist for the Title III programs had been employed. However, the director of the Center for Planning and Innovation in Education[9] was taking a cautious attitude towards the information system innovation. Apparently, he was suspending some plans for acquiring personnel until some action had been taken on the information system proposal. He would like to see more interface between document-based systems and management information systems.

The persons associated with the Special Education Instructional Materials Center (SEIMC) had a vested interest in the innovation being considered. Little, if any, mention of these persons could be found in correspondence associated with the information system innovation. This lack of interaction between the NYRCU and SEIMC may be due in part to their positions on the organizational chart. SEIMC is far removed from the activities of the Division of Research.

This discussion of the personalities and positions most likely to influence the innovation must include a comment on the research aide. His youth and enthusiasm work to enhance the likelihood that the innovation will be adopted. Also, it is important to note his commitment to a total system of information dissemination. Each record of correspondence associated with his appointments in the Division or Research and Division of Educational Finance contains references to the "pilot project" and the hope it will become fully operational. This kind of dogged determination and persistence influences the project's chances of successful adoption.

Face-to-Face Communication. The need to involve appropriate people in the development of a new idea seems to be almost axiomatic. It is especially important to involve persons who will be affected by the innovation itself. This was done by contacting institutions with ERIC collections by mail and following this contact with a visit to the persons in charge of these ERIC collections. Presentations were made to vocational teacher organizations such as the Research Seminar for Business Educators scheduled on October 11, 1968. The agenda included a discussion of the ERIC system and the problems of using educational research information. Vocational education clientele groups were made aware of the innovation through the NYRCU Newsletter which included periodic references to the information system. A more intensive activity was conducted within the BOCES who had accepted ERIC microfiche

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[9]These statements are based on an interview with the director on May 4, 1970.

collections. The open house activities included a presentation on how to use the ERIC system and a "hands on use" experience with microfiche readers. It was hoped the individuals attending would be able to appreciate the potential of the ERIC system and be more willing to allocate money to the maintenance of the microfiche collection. The NYRCU staff found little evidence of knowledge of the ERIC system among the audiences. In one report of these meetings, the following generalization was made:

> We were able to draw one undeniable conclusion and that is that even in a highly educational area where a great many resources are available, they (the microfiche) do not get utilized unless there is a linking force which brings together problem and resources. This was evident in that the group was not aware of any of the studies or documents we mentioned.

The report goes on to recommend a plan to "localize" ERIC resources and relate them to problems in public school systems. This statement begins to hint at the need for local change agents in school systems. The implementation of such objectives requires more than persuasion and enthusiasm. Ultimately, the adoption of innovations requires a commitment of resources in both time and money to support change agent activities.

The role for the NYRCU as perceived by its personnel and the director of the Division of Research is one of a change agency with a coordinated information system providing feedback communication from local agencies concerning problems and plans which need to be researched. In turn, the research and development projects results would be disseminated through linking agencies such as BOCES. Hopefully, local and regional personnel will be available to assist in the implementation of innovations in school settings.

Resource Levels. Not only people, but also resource levels, impact on the decision to install an innovation. Allocations of resources for partial support of an idea for a specific length of time frequently succeed as change strategy. In this case, the promise of a $4,000 set of microfiche represented a crucial variable in the decision for regional BOCES to become a part of the information network. Correspondence records validate the concern of BOCES directors over financing the maintenance of this collection. The project was designed as a first-year pilot test whereby either the NYRCU or the BOCES could request the microfiche collection be moved to another location. The costs of maintaining the microfiche collection did not start until the 1970-71 school year. This allowed the BOCES directors time to influence their board to include this item in their annual school budget. In every case, the BOCES board decided to maintain the microfiche collection.

Credibility of the Change Agency. Any attempt to restructure a bureaucratic organization or to incorporate different procedures within an organization may be looked upon with suspicion. It is important for the agency and persons associated with innovation to establish credibility with co-workers and potential consumers of their product. Credibility may be established in a number of ways: by amassing empirical evidence to support the position taken by the innovation; by associating oneself with agencies or personalities who are esteemed by the target audiences; or by citing authoritative sources supporting the innovation being considered for adoption.

Support for the coordinated information network came from the U.S. Office of Education. On at least two occasions, the director of the Division of Information Technology and Dissemination commended the State Education Department staff on the attempt to install a statewide coordinated information system. He noted the activities of the Center for Planning and Innovation as well as the NYRCU. The December 15, 1969 issue of *ERIC User Notes* described the innovative network of microfiche centers in New York. This event served to legitimize the pilot project activities. It was shortly after this notice appeared that the State University of New York at Albany decided to join the network. The U.S.O.E. endorsement of this project has been cited by RCU staff members in communications to decision-makers in the State Education Department. A memo to the Deputy Commissioner of Education called this a significant development for the pilot project.

A second event which legitimized the information service activities of the NYRCU was the establishment of a state ERIC Input Agency. A memo to the director of the Division of Research outlines sources of documents for this input agency. Appendix C includes information concerning this activity. The state ERIC Input Agency has responsibility for reviewing documents and recommending them for the ERIC system. The Input Agency must determine any copyright restrictions or other problems in releasing the document for public consumption.

Rational Bias Operating. By the Fall of 1968, RCU staff members had determined a need to decentralize the ERIC operation. Requests were reaching sufficient volume to saturate the capability of the staff. A brief survey of information dissemination in New York yielded a picture of several fragmented systems attempting to disseminate educational information. A local educator requesting information on certain topics would need to contact three or four state offices.

Coordination and elimination of unnecessary duplication provided the rational basis for an information center in the State Education Department. Bureau chiefs in the department were made aware of this rationale by visitations from the RCU staff during

June of 1968. The rationale statement was made explicit in several copies of the innovation proposal, particularly the version dated August, 1969.

Despite the compelling nature of the problem and the clearly delineated need for a coordination of information systems, it required over a year for the State Education Department committee to develop a proposal for the innovation. A task force was formed, chaired by the RCU research aide, and composed of representatives from the State Library System and the Title III programs. This task force was appointed by the Assistant Commissioner for Long-Range Planning in April of 1969. It prepared a proposal dated April, 1970 for his review, and for consideration by other decision-makers in the State Education Department. A decision-making meeting scheduled for September 30, 1970 with the Commissioner of Education was postponed.

Alternatives to the Innovation. It is always difficult to bring about structural change in a bureaucratic organization. Individuals with well-defined responsibilities want to insure status and prestige under the proposed change. Therefore, it is the rule rather than the exception to have persons perceive proposed adjustments as threats to their existing situations. Undoubtedly, some of these fears are responsible for the delay in approving and operationalizing the proposed innovation. It may be that inducements from agencies outside the State Education Department will be necessary before the plan can be fully operationalized, even on a trial basis.

Certain key issues remain unresolved. One is the location of this information center in the State Education Department. The proposals submitted have not included the Center for Planning and Innovation as a potential location for this unit. Likewise, the rationale for this proposal has sidestepped the issue of making the proposed document-based ERIC system compatible with management information systems requiring the establishment of regional computer facilities. The reader will recall that this need for management information was pointed up by the director of the Center for Planning and Innovation. Another unresolved issue is the problem of how the proposed information network will affect the Special Education Instructional Materials Center. This is a serious question because of the well-developed SEIMC network in New York State. Already, the establishment of an ERIC Input Agency has interrupted the direct acquisition of documents by the clearinghouse.

These vested interests which have developed over time must be taken into account in the adoption of a coordinated information system. The innovation must be adjusted to accommodate the viable, effective features of previously established systems. This requires a great deal of negotiation with individuals and organizations

whose propriety will be affected by this change. Also, it requires an attitude of goodwill and an organizational climate which is responsive to total organizational needs as well as specialized interests.

March, 1968	The NYRCU employed a research aide.
April, 1968	The Center for Vocational and Technical Education announced intent to initiate a pilot program in dissemination systems.
May, 1968	The decision was made in the NYRCU to include all ERIC microfiche in each collection.
June, 1968	A survey of bureau chiefs was made to determine the propriety of developing a department-wide information center.
July, 1968	The "Ideas to Implementation" document was written.
October, 1968	The Seminar for Business Educators was held (one of several held during the summer).
November, 1968	Meetings were held with the Home Economics College Personnel.
November, 1968	A meeting was held with the assistant commissioner of the State Library, the associate commissioner of Cultural Education, the director of the Division of Research, the director of the Research Coordinating Unit, the Title III dissemination specialist, and the research aide to discuss a draft copy of the proposal.
December, 1968	A list of the New York ERIC microfiche collections was provided by the National Cash Register.
April, 1969	A meeting was held with the assistant commissioner for Long-Range Planning, the assistant commissioner of the State Library, the director of the Division of Research, the associate commissioner of Cultural Education, the director of the Research Coordinating Unit, the research aide and the Title III dissemination specialist.
April, 1969	A decision to purchase four microfiche collections was made.
May, 1969	The recipients of NYRCU microfiche collections were selected among Boards of Cooperative Educational Services.
May 5, 1969	An initial letter was sent to BOCES asking for interest in ERIC collections.
May, 1969	A meeting was held with the director of the Center for Planning and Innovation, the assistant commissioner of the State Library, the director of the Division of Research, the associate commissioner of Cultural Education, the research aide, and the Title III dissemination specialist.

May, 1969	A meeting was held with Syracuse area teachers (ECCO).
May, 1969	A formal invitation was sent from The Center for Vocational and Technical Education to join a pilot program to develop an exemplary vocational-technical information dissemination system.
June, 1969	Four microfiche collections were purchased.
June 12, 1969	A meeting was held with Listfax.
July, 1969	A meeting was held with Pilot states at The Center.
August, 1969	"A State Design for Educational Research and Resource Utilization" was written.
September 10, 1969	The RCU was appointed as the New York ERIC service unit.
October 2, 1969	The first meeting of the Title III Network Dissemination task force was held.
October 14 - October 22, 1969	Visitations were made to 18 ERIC collections in New York.
November 12 - November 13, 1969	Open houses were held at Broome, Delaware, Tioga BOCES.
December 15, 1969	A reference was made to the New York RCU in *ERIC User Notes*.
January 13 - January 16, 1970	Visitations were made to "cooperating institutions" (down state).
January, 1970	The PREP program was turned over to the New York RCU.
November 2 - November 17, 1970	Orientation meeting was conducted by RCU staff for potential information system users.
November, 1970	An updated brochure of ERIC services was distributed to cooperating institutions.

Chronological Events of the Decision Process

Figure 4

CHAPTER IV

PROVIDING INFORMATION SERVICES TO NETWORK USERS

Providing information services to network users is the object of the innovation being studied. It necessitates a look at existing services and the projection of priority needs for the future. The likelihood of an innovation being accepted by an institution is almost proportionate to the degree to which it can be adapted to the requirements of the institution.

This chapter includes data on information services in New York State. It includes sources of data from NYRCU records and a mailed questionnaire to cooperating schools. The user information was drawn from user records of the New York Research Coordinating Unit from January through September, 1970. They represent requests from all persons interested in information which can be obtained through the ERIC system. The data reported in Tables 2 and 3 were obtained from a survey of the cooperating institutions which have become part of the coordinated information network.

LOCATING THE ERIC MICROFICHE COLLECTIONS

The decision by the staff of the NYRCU to implement a network of ERIC microfiche collections precipitated an examination of existing collections and a discussion of "best" locations for additional collections. In May of 1969, a letter from the NYRCU was sent to the National Cash Register Company requesting a list of ERIC collections in New York. The list was received and the collections were plotted on a map.

It seemed important to locate the four microfiche collections purchased by the New York Research Coordination Unit (NYRCU) in an institution serving local educational agencies. Boards of Cooperative Education Services draw students from contributing schools to study vocational education and other subjects. The intermediate unit is a legal area with all school districts contributing financial resources, thus sharing in the success of the BOCES centers. Frequently, this board is a county unit. In all cases, it attempts to maintain programs and services which would be difficult for individual school districts to offer. Originally, the intermediary unit was created for special education students. Even

today, almost 50 percent of their clientele could be considered special education students. However, many BOCES have developed extensive vocational educational programs and contain libraries of filmstrips and instructional materials more complete than the libraries in member school districts. Teachers from the contributing schools use BOCES libraries for improving instructional practices.

The BOCES were designated by the NYRCU staff as the prime audience to receive the ERIC collections. Accordingly, a letter was mailed to each BOCES director inviting his attention to this pilot dissemination effort. The letter noted that the project was associated with activities at The Center for Vocational and Technical Education, The Ohio State University. It asked the directors to respond with an indication of potential use of the ERIC microfiche collection. A reply was received from a major portion of the BOCES directors. A follow-up phone call went to all directors who did not reply to the letter.

Based on (1) replies from BOCES directors, (2) the NYRCU records of microfiche use, and (3) limited access to an ERIC collection, four areas of the state emerged as candidates for ERIC collections. The directors were contacted and in every case they agreed to accept the collection on a trial basis.

The four BOCES centers selected to receive ERIC collections differ greatly in the number of students served. One center serves as few as 6,000 students, grades K through 12, in 13 school districts. Another BOCES serves as many as 60,000 students and 4,000 teachers in 19 school districts. Three of the four BOCES are located in rather sparsely populated sections of the state. Classroom teachers have access to the BOCES libraries due to their convenient locations. In one BOCES district, the nearest college or university library is located 60 miles from most local schools.

LINKING LOCAL EDUCATIONAL AGENCIES TO BOCES CENTERS

The strength and quality of the relationship which exists between an intermediate school district and its component districts determines the participation which takes place. Each BOCES has mechanisms for strengthening communication with component school districts. In one case, the BOCES director meets with local superintendents of school districts once a month to discuss program improvements and services. With assistance from the NYRCU office, each of the four BOCES has offered an ERIC orientation program to teachers and others from member school districts. Most of the programs were deemed successful for both day and evening presentations. The sessions were designed to answer questions of administrators and teachers and provide them a "hands on" approach to using microfiche readers and the ERIC index.

The cooperating institutions perform both conveyor and consultant roles as they link the Coordinated Information Center to user school districts. They provide access to the microfiche collections in a relatively routine manner. The chief official of the smaller institutions, e.g., BOCES Director, or Title III Director, perceives himself as responsible for supervision of the microfiche collections. Head librarians usually supervise the collections in the colleges and universities. Undoubtedly, this routinization of services in the traditional library mode tends to support the conveyor role. When resources become available to hire a person to actively solicit problems for solution, the consultant role will become more prominent. Some BOCES microfiche supervisors answer requests by phone and stimulate use of the collection by direct mailings to their school districts at the present time.[10]

The consultant role is likely to be taken by visiting staff from the State Education Department. Information specialists from the NYRCU recommend processes and suggest procedures in the management of microfiche collections. Frequently, this advice comes as a result of special invitations from the cooperating institution. This client relationship, inherent in the consultant role, usually means a receptive atmosphere for change.

Frequently, an assistant director or other BOCES administrator was in charge of supervising the ERIC collection. The importance of local autonomy and control of any educational activity should not be minimized. In one instance, a group of teachers in local school systems banded together through their union and bargained for released time to improve instruction. This group of teachers set up a meeting to visit one BOCES center. They received released time for this from their administration. It is interesting to note that these teachers visiting the BOCES center during the school day had not participated in earlier opportunities to visit the BOCES center during evening sessions. Other school districts have released one teacher to work full-time on improved instruction in the system. These incidents are cited to point up the need for change agencies such as a BOCES district to work within existing structures.

The BOCES units are designed essentially as service institutions to local school districts. The directors and personnel in BOCES are sensitive to this need. However, some teachers in component school districts still perceive BOCES personnel as "outsiders" in their schools. Therefore, some directors have designated

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[10]The importance of this personal interface between the microfiche supervisor and the user should not be minimized. Coney and others (1968, p. ii) suggest that the greatest breakdown in the utilization of information systems occurs at the user interface.

one person as a BOCES representative in each member school. One director has announcements and other information typed on a dittoed sheet which is mailed to his representatives in local school districts. This provides the BOCES representative with information prior to its general dissemination and gives this person influence as a BOCES representative. The director meets with these people regularly and works through them on many matters not relating to policy. The use of a school district leader to influence opinions of peers is recognized as one strategy for implementing innovations in a system.

However, the flow of influence from innovators to opinion leaders is not well understood. A purveyor of new ideas, such as a change agent, should look for innovators to try out his product. Local school teachers who have been accepted by their peers aid in the spread of information. Whenever possible, these educational leaders should be utilized when trying out new ideas. Results from the mail survey in this study show a high proportion of microfiche users pursuing graduate sources. This indicates a subpopulation which may be upward mobile with a strong desire for achievement. The ERIC system is likely to be perceived in a favorable light by these people.

The offer to invest approximately $4,000 for each collection of microfiche in the four BOCES made by the NYRCU caught the attention of the BOCES directors and the staffs from the cooperating schools who recognized the value of this collection for instructional improvement. In addition, the NYRCU purchased a reader-printer and supplies for each of the four BOCES at the cost of approximately $400. It appears the BOCES directors are planning to ask their administration for an additional piece of equipment, the microfiche reproducer, which, if purchased, could make the BOCES relatively independent of requests to the NYRCU. Currently the NYRCU is the only educational institution providing microfiche reproduction service in New York State. One BOCES board has already allocated funds for microfiche reproduction equipment which essentially makes that area self-sufficient. This represents an important step towards the ultimate goal of decentralizing information services within New York State.

NEGOTIATING THE NETWORK AGREEMENT

In May of 1969, a letter was mailed to all institutions with standing orders to ERIC collections in New York. Preliminary conferences with New York State Library staff and Title III representatives authorized such a letter. See Appendix C for a copy of this letter. The schools with existing microfiche collections were asked to open their doors and allow free public access, regardless of institution affiliation, to the microfiche. In return, they were made a part of the network system which included free

publicity and eligibility to participate in future programs. These ERIC collections included locations in Title III and Title II ESEA Programs (Elementary and Secondary Education Act).

Institutions with microfiche collections were maintaining them through very different support systems, e.g., the Title III centers were financed through the Center on Innovation and Planning in the State Education Department; the library microfiche collections are financed under the State Library System; and the BOCES microfiche collections were financed through the Research Coordinating Unit. The NYRCU staff is endeavoring through the coordinated dissemination effort to bring together these systems in a unified approach to serving the needs of professional educators. The creation of this network marks a major step towards attaining a fundamental objective of the project which is the coordinating of all the State Education Departments' information services under one diffusion and dissemination activity. It is important to note that the microfiche collections in libraries were purchased and maintained under the authorization of the State Library System. In addition to the collections listed, one collection of ERIC documents is located in the State Education Library of the State Education Department. It is this collection that sustains the NYRCU ERIC operation in Albany.

Of the 25 institutions receiving a letter in May of 1969, 21 agreed to become a part of the information network. The four dissenting institutions were: The New York Institute of Technology, The New York City Board of Education, Hofstra University on Long Island, and the State University of New York at Albany. However, the State University of New York at Albany agreed to become a member of the information network soon after the announcement of this network program appeared in *ERIC User Notes*. There appeared to be at least two reasons for an institution's desire to affiliate with the network: (1) it offered a valuable resource for communication with other depositories of ERIC collections, and (2) the purpose of the network was to extend the service role of the institution and encourage the utilization of ERIC microfiche.

A list published by Central ERIC in December, 1969 showed additional ERIC collections in New York State. These were contacted, making the total number of cooperating institutions involved in the information network 32:

TYPE OF INSTITUTIONS

College or University

State Education Department
State University College at Buffalo
State University College at Cortland

State University College at Fredonia
State University College at Geneseo
State University College at New Paltz
State University College at Oswego
State University College at Potsdam
State University of New York at Albany
State University of New York at Buffalo
Brooklyn College Library
Elmira College Library
Bank Street College of Education
New York University Library
University of Rochester Library
Syracuse University Library
College of St. Rose
Teachers College Library
Richmond College Library
State University of New York at Stony Brook

Title III Centers

CHE-MAD-HER-ON
Suffolk County Regional Center
Western New York School Study Council
Educational and Cultural Center serving Onondaga and Oswego Counties
Southern Tier Regional Education Center

BOCES

Allegany County Occupational Center
Broome, Delaware and Tioga Counties
Orange, Ulster and Sullivan Counties
Essex County Area Educational Center
BOCES #1, Yorktown Heights

Other

Center for Urban Education, New York City
City School District, Elmira

As the reader will note, most of the collections are located in college or university libraries. Five are in Title III Centers, five are located in BOCES,[11] and two are in other institutions. For purposes of questionnaire analysis, the Center for Urban Education was grouped with Title III Centers, and the City School District in Elmira was grouped with BOCES. The rationale for this

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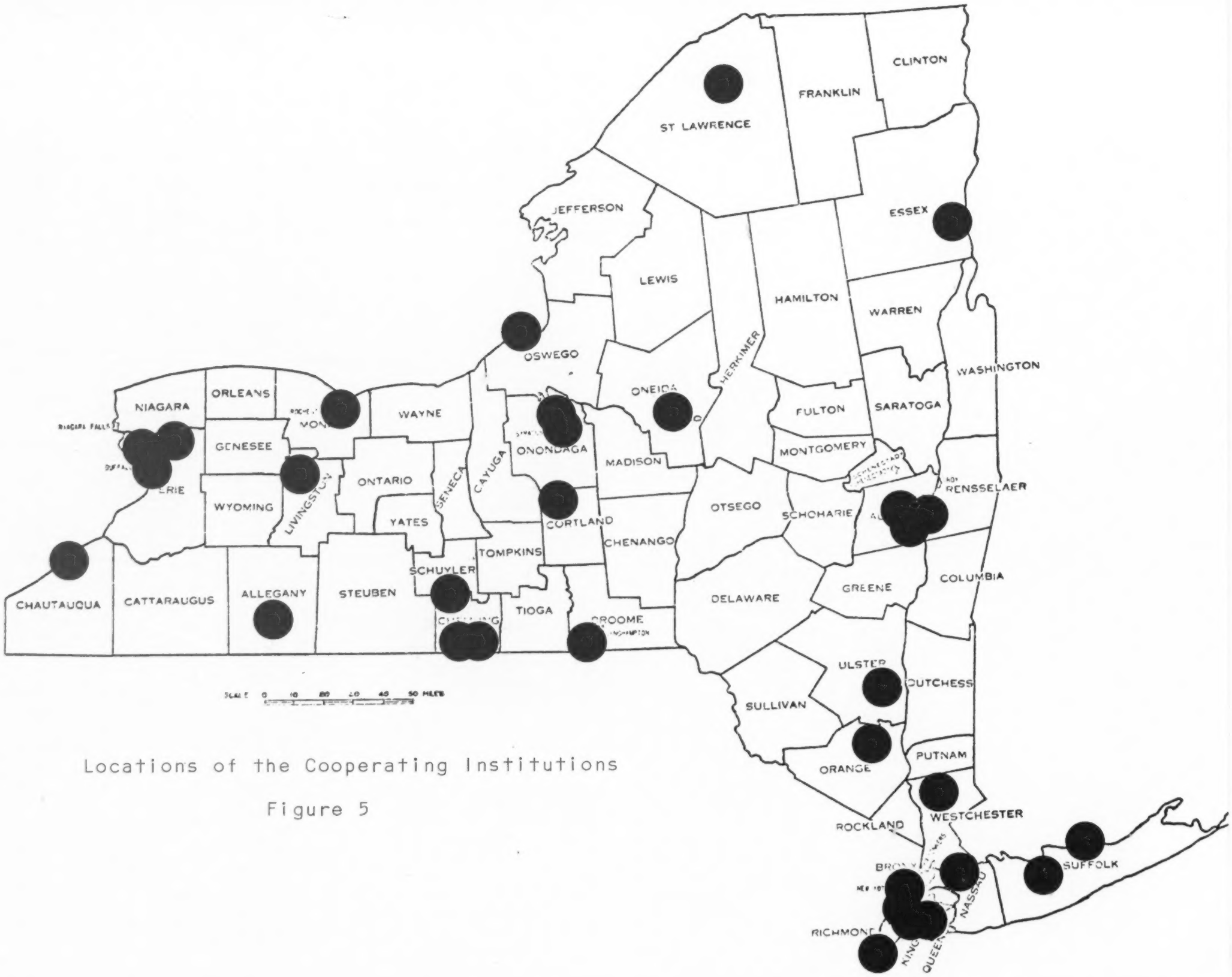
[11]The fifth BOCES had acquired an ERIC microfiche collection prior to the formation of the coordinated information network.



Locations of the Cooperating Institutions

Figure 5

decision was that the Center for Urban Education appeared to function in a more general rather than local area, while the City School District represented a local educational institution. These institutions are now referred to as "cooperating institutions."

CREATING AWARENESS OF THE ERIC NETWORK AND SERVICE

The New York State ERIC Service was initiated formally during January of 1970 through the distribution in late December, 1969 of an explanatory brochure. Initiating an ERIC Service by no means insures usage. The vast majority of educators in New York State had never heard of ERIC or seen a collection of microfiche.

In addition to the early ERIC orientation sessions held at the four BOCES, similar sessions for educators were held in university settings and in a Title III Regional Center. Also, several conference presentations were given aimed at creating a working knowledge of the ERIC network.

In addition to "live" presentations, a written description of the ERIC network appeared in the Education Department's monthly publication entitled *Inside Education*. The New York State Teachers Association ran an article in the December (1969) issue of their monthly newsletter. The NYRCU Newsletter ran an article describing the ERIC Service just prior to its formal initiation. Since that time, the Newsletter has listed any changes in address information for cooperating instituions, and also has listed the availability of documents in microfiche form.

In November, 1970, an updated brochure describing the ERIC Service was distributed. In light of the library involvement with the ERIC Service, a library oriented publicity campaign was undertaken.

Arrangements were made through the Bureau of School Libraries to make each school librarian an agent for the ERIC Service. Since every school in New York State with an enrollment of over 50 must have a school librarian, this new approach allows for an "ERIC agent" in virtually every school in the state.

An initial information sheet was sent to every school librarian (4,500) in New York. The information sheet, published by the NYRCU and distributed by the Bureau for School Libraries, served the purpose of informing each librarian of the ERIC role they would play and also served as an informative publicity message to be posted for educators.

The second phase of the library oriented campaign consisted of sending each librarian a detailed brochure describing ERIC

services and products. This brochure was available to any educator that sought information through the school librarian.

In addition, the detailed brochure was sent to each cooperating institution and to all those who received the original brochure distributed in late December, 1969. This distribution included all public school principals, superintendents, curriculum coordinators, department chairmen, occupational education directors, adult education directors and teacher-educators.

THE ERIC SERVICE

The services available to educators in New York State include:

1. Access to and assistance in using any ERIC collection housed in a cooperating institution regardless of the educator's institutional affiliation.

2. Availability of printed abstracts of ERIC documents.

3. Up to 20 free ERIC microfiche per request.

4. Literature searches for those individuals who do not have access to one of the 32 cooperating institutions.

5. Assistance in interpreting and applying research or project information.

6. Centralized ERIC input for locally produced educational documents.

7. Direct access to the Education Section of the State Library for those educators desiring a broader information base than ERIC.

In addition to these direct user services, the ERIC Service also distributes computer generated ERIC bibliographies to all cooperating institutions which are then made available to local educators.

Another indirect "service" has taken the form of a price reduction in purchasing microfiche readers which came about through negotiations with a major manufacturer of microfiche readers.

USE OF THE ERIC SERVICE

The ERIC Service Unit within the NYRCU has kept accurate records of usage since the initiation of the Service in January,

1970. The cooperating institutions have not been required to document daily usage; however, estimates were acquired from each cooperating institution through the mail survey associated with this study.

The following tables and figures illustrate the demands made on the New York ERIC Unit through the first three quarters of operation. It must be kept in mind that Table 1 and Figures 6 and 7 do not include data from the cooperating institutions. The term "responsive dissemination" refers to the written and verbal requests made to the NYRCU for information other than the duplication of microfiche.

Figure 6 illustrates the "seasonal" trend of ERIC Service Unit requests. The high number of requests during the months of April and May may be attributed to three factors.

1. The distribution of two NYRCU Newsletters which described the New York ERIC Service.

2. The term paper requirements made of graduate students including those employed as teachers. Preparation for these papers is typically accomplished at the last minute and is reflected in Figure 6. Information available from New York State Library statistics reflect the same seasonal pattern.

3. Budget preparations at the local level are usually accomplished in the spring. This places high demands on program, financial and teacher negotiation information.

At the early stages of system development, it appears demand will increase as a function of the publicity given to the system and its services. Although the three variables cannot be observed independently, it is obvious that an increase in the first will yield increases in the second and third since one cannot use a service unless one is aware of its existence.

The volume of requests for reproduced microfiche shown in Figure 6 is rather surprising since it was not known to what extent microfiche reading equipment was available and it was expected that since microfiche is a relative newcomer to the microform field, usage would be light.

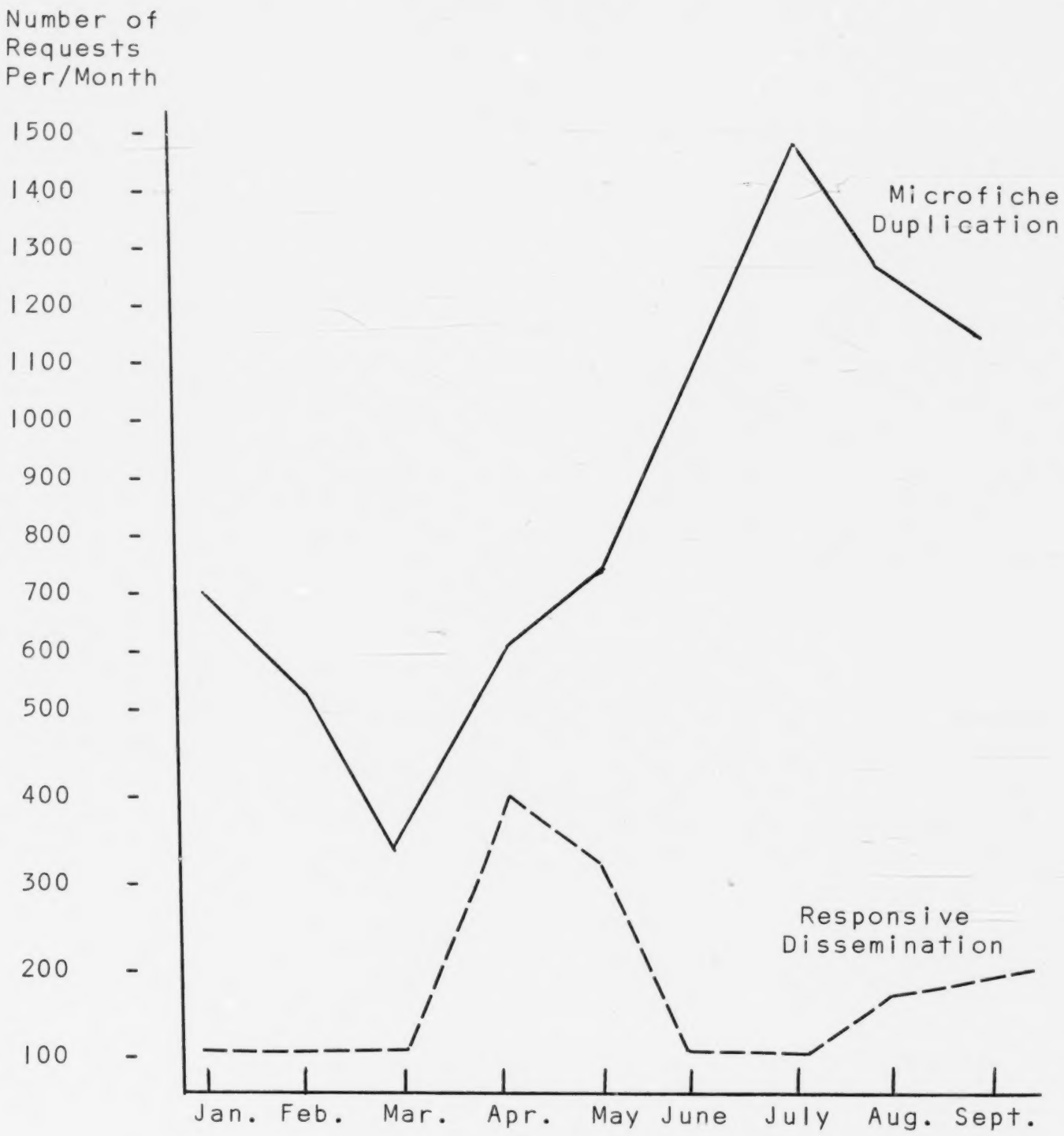
As will be noted, ever since June, 1970 the number of microfiche reproduced per month has exceeded 1,000.

The high volume of reproduction during the months of June and July is due largely to librarians (public and school) requesting materials in preparation for the next school year. New York State curriculum materials were also made available through

Table I

Proportion of User Requests to
the NYRCU, Jan.-Sept. 1970
by Type of Institution

TYPE OF INSTITUTION	Percent of User Requests		
	Reproduced Microfiche	Responsive Dissemination	Total
Local Education Agency	28.0	62.0	55.0
Post Secondary Institutions	9.0	11.0	10.9
BOCES	3.0	8.0	7.0
State Education Department Staff	27.0	3.5	8.0
Educational Associations or Regional Centers	12.0	2.0	4.0
Public Libraries	12.0	.8	3.0
Miscellaneous	9.0	12.7	12.1
TOTAL	100.0	100.0	100.0



Total Number of User Requests for Information Services to the NYRCU

Jan.-Sept. 1970

Figure 6

the ERIC service during July which added to the increase of requests. The average number of microfiche reproduced per request is 35. In June of 1970 a limit of 20 microfiche per request was placed on users mainly due to the misuse of this service by a small number of users.

Table 1 lists the responsive dissemination for the nine-month period in terms of user categories. As will be noted, the single most outstanding category is "Local Educational Agency" (62 percent). The addition of "Post Secondary Institutions" and "BOCES" raises this to 81 percent. These three groups represent practitioner levels, the ones for whom the service was intended.

The largest group requesting reproduced microfiche is "Local Educational Agency" (28 percent). A close second is the "NYS Education Department Staff" category at 27 percent. The high usage in this category is mostly attributable to research work by department staff for in-house or field work. "Libraries" and "Educational Associations and Regional Centers" account for an additional 24 percent.

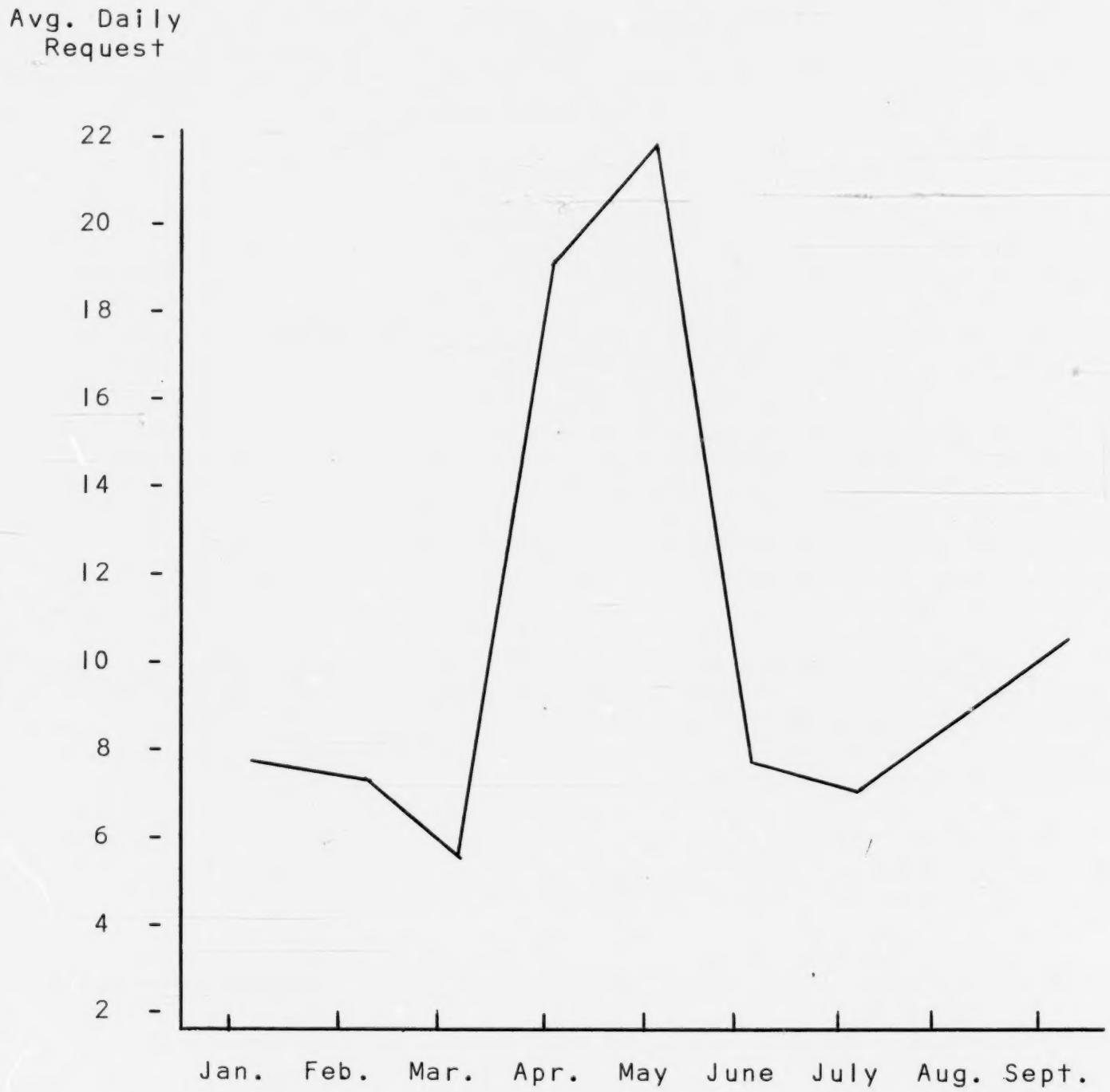
In terms of reaching the practitioner, a grouping of "Local Educational Agency," "Post Secondary Institution" and "BOCES" represents 40 percent of all microfiche reproduced. This is not as great as the 81 percent shown for the same grouping under Responsive Dissemination, but it is high.

The major variable in the volume of reproduced microfiche is the availability of readers, and it is apparent that local educational agencies lack this facility.

As can be noted, a grouping of the practitioner level categories (LEA, Post Secondary, BOCES) for total usage yields 72.9 percent. This total service profile indicates that the practitioner is being reached through the ERIC Service. Government agencies again represent the major portion (14.1 percent) of the users that do not fall in the practitioner grouping.

Figure 7 represents a monthly index of usage expressed as "Requests Per Operating Day." As previously mentioned, this figure represents an overall index of usage through the nine months. This index, which is calculated for the entire period, yields an average 10.7 requests per day. This compares very favorably to the greatest number of requests per operating day calculated monthly for the first nine months of 1968 of 2.1.

This statistic, more than any other, illustrates the significant decrease from May to June. Three variables were previously mentioned as being largely responsible for the April and May



Requests Per Operating Day, NYRCU
By Month, Jan. to Sept. 1970

Figure 7

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increases in service. It is thought by the New York ERIC Service staff that the accentuated low points in June and July may be due to two variables:

1. Disruptions which occurred in many post-secondary and secondary institutions, and

2. Normal summer recess.

Only a second year of operation will verify the effect and amplitude of the first variable.

USE OF THE ERIC SERVICE AT THE COOPERATING INSTITUTIONS

A questionnaire was devised to assess the use of the ERIC microfiche collections located in the institutions forming the coordinated information net. It was sent to each of the supervisors in charge of the microfiche collections. The cooperating institutions vary considerably in the number of people and amount of resources which can be allocated to dissemination.

The researchers were particularly interested in the reasons why such institutions agreed to become members of the information net. In most institutions, the microfiche collection has always been open to the public. Private colleges indicated the availability of microfiche to all potential users was extended as a courtesy and, in some cases, as a public relations gesture. Dollars for the purchase and maintenance of the ERIC microfiche collection in private colleges came from local library funds. Most other collections were purchased through the State Library System with a combination of federal and state monies.

This coordinated network of institutions containing ERIC microfiche collections represents a very flexible arrangement. The institutions are not committed to any type of intra-institutional loan system for referring user requests. Cooperative arrangements for procuring or producing microfiche do not exist for 25 of the 31 institutions. In most cases, the inter-library loan system was the basis for their cooperative endeavors. The BOCES and Title III centers frequently referred questions on educational information to the nearest college library or to the State Education Department. Colleges and universities tended to rely on their reference librarian who in turn may initiate inquiries through the inter-library system.

It is logical to assume that utilization of ERIC microfiche collections requires a potential consumer's awareness of this resource and an ability to effectively gain access to the system. In other words, the microfiche user must know how to obtain copies

of the microfiche or hard copy printouts. Institutions in this coordinated information network have attempted to provide some in-house training sessions for potential users. Colleges and universities have announced the microfiche collection with a memo to department heads or a notice in the faculty bulletin. A few libraries circulate acquisition lists which include microfiche headings. Many institutions feel that word-of-mouth is effective in making students aware of the microfiche collections. One of the major sources for users on campuses appears to be students who have been referred to the collection by their instructor. Several of the BOCES centers and Title III centers have used a newsletter to communicate with teachers in surrounding school districts.

Responses from the 31 cooperating institutions were analyzed for information which would describe a profile of user activities. Microfiche use on the 19 college and university campuses consistently showed the graduate student as the most frequent user of the collection. Frequently, the students were teachers completing advance degrees. Presumably, this accounted for some of the high levels of inquiry noted in the NYRCU records during the early spring. This generalization is consistent with the data described in Tables 2 and 3. Usage at the BOCES and Title III centers also included preparation for graduate course work. However, Table 3 shows a decided increase in the use of the microfiche at BOCES and Title III centers for the improvement of instruction in high school when compared with the responses from the 19 colleges and universities. The following user categories, "teachers as graduate students," "teachers for local school use" and "local administrators" indicate that the local practitioner group represents 56 percent of the cooperating institution use. The large number of teachers using the system for graduate instruction is understandable since New York State requires teachers to obtain 30 graduate credit hours within five years for permanent teacher certification.

The average estimated use of the microfiche collection per operating day was considerably higher for the college and university collections. This may be due to the ease of access and intrinsic motivation in the form of class assignments. These institutions average six requests per operating day compared to 1.2 requests for the BOCES and Title III centers. As many as 100 persons per week use the collections in colleges and universities. The level of use in the other institutions rarely extends over 15 persons per week. Some of the institutions reported their use cycle as fairly equal throughout the year. Spring was the heaviest season for using ERIC, with summer, winter and fall following in order. This evidence substantiates the high use due to graduate student instruction. Interestingly, about as many institutions reported extensive use of microfiche collections after the normal

Table 2

Occupations of ERIC Users by Type of Cooperating Institution[a]

Occupations of Users	BOCES N = 6	Title III N = 6	St. Univ. Colleges & Universities N = 10	Private Colleges & Universities N = 9	Total	Percent of Total
College or university professor...			2	1	3	5.2%
College or university undergraduate college student.....			5	2	7	12.2%
Graduate student, excluding public school teachers.....		3	4	6	13	23.6%
Public school teachers as a graduate student.....	4	4	6	5	19	33.3%
Public school teacher (local school use).....	4	3	1		8	14.0%
Public school administrator.....	2	2		1	5	8.7%
Researcher.....				1	1	1.7%
Librarian.....			1		1	1.7%
TOTAL	10	12	19	16	57	

[a]Each institution named one or two main user categories.

Table 3

Purposes of ERIC Searches by Type of Cooperating Institution[a]

Purposes of ERIC Searches	BOCES N = 6	Title III N = 6	St. Univ. Colleges & Universities N = 10	Private Colleges & Universities N = 9	Total	Percent of Total
to complete course work at a college or university.....	4	5	9	9	27	45.8%
to complete class assignments in a high school.....	1				1	1.7%
to improve instruction in a college or university.....			3		3	5.1%
to improve instruction in a high school.....	5	4	2		11	18.6%
to prepare research and development proposals for federal or state funding....				1	1	1.7%
a literature review to be used in theses and dissertations.....	1	3	5	6	15	25.4%
others.....			1		1	1.7%
TOTALS	11	12	20	16	59	

[a]Each institution named one or two main search purposes.

public school day as during school hours. This may be attributed to the time available for teacher preparation and graduate work.

It appears that the teacher who is pursuing graduate credit is a frequent user of the ERIC microfiche collections. Presumably, much of the information obtained is dispersed to the high school classroom by this same teacher. Interestingly, not very many colleges and universities indicated the professor as a major user of microfiche collections. Researchers apparently do much of the literature review through other media.

A summary of the ERIC service usage indicates that BOCES and Title III centers are more likely to be oriented to the practitioner than are the universities or colleges. This is understandable since institutions of higher education must give priority to students and faculty. The concentration of people on the college campus accounts, to some degree, for the more extensive usage of the microfiche collections when compared to Title III and BOCES centers. Records from the NYRCU ERIC unit show that over 70 percent of the requests originate at the practitioner level. These requests are coming in at the rate of 10.7 per operating day. This volume of requests represents a substantial increase over previous levels and compares favorably to the volume of requests made to each of the 20 ERIC clearinghouses, which though not funded to serve individual users, have national visibility in their substantive field, and hence, receive many requests.

CHAPTER V

SUMMARY

In recent years, a multiplicity of information systems have sprung up to accommodate the volume of information created by the knowledge explosion. Fragmented, incomplete information systems in many states emphasize the need for an efficient, coordinated information flow from research findings to practical application. The development of a coordinated educational information network and its installation into the New York State Education Department was the subject of this report. In addition, the decision processes associated with the installation of this network were investigated. Specifically, the study was designed to (1) document the events and activities associated with the installation of an innovation in a bureaucratic agency, (2) assess the context of information services in the State of New York, and (3) analyze and interpret strategies for effecting a coordinated information network.

The case study includes the time frame of March 1, 1968 to September 30, 1970. Much of the data for these months were collected ex post facto from personal correspondence and other written records secured from the files of the New York Research Coordinating Unit. The Center for Vocational and Technical Education became involved in the study in February, 1970. Interviews were conducted with various members of the New York State Education Department during one two-day visit by The Center project staff. A one-half day session was held with representatives from four Boards of Cooperative Education Services (BOCES).[12] This meeting provided information on the involvement of the BOCES in this project. In addition, a mailed questionnaire was returned by every institution cooperating in this coordinated information network.

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[12]The BOCES are regional agencies comprised of component districts. BOCES provide instructional services to member districts on a shared basis.

RESEARCH FINDINGS

Research Findings Associated with ERIC Microfiche Use and Utilization

1. Over half of the user requests for microfiche reproduction or information received by the NYRCU came from local educational agencies.

2. Approximately 25 percent of the users were public school teachers enrolled as graduate students.

2.1 Fourteen percent of the users were public school teachers who were not graduate students.

3. Approximately 19 percent of the ERIC microfiche requested were utilized to improve instruction in the high school.

3.1 Over 80 percent of the requests relating to instructional improvement were made of BOCES and Title III Centers.

4. Over 70 percent of the requests were related to completion of college and university course work.

4.1 Thirty percent of the requests related to the completion of college and university course work were made of BOCES and Title III Centers.

5. Requests related to the completion of class assignments in a high school and for the preparation of research and development proposals accounted for approximately 3.5 percent of the requests surveyed.

Research Findings Associated with the Installation of a Coordinated Information Center in the New York State Education Department

Events

1. In July, 1968, an NYRCU newsletter was initiated to local education agencies. It continues today.

2. The NYRCU became a part of a pilot project on information dissemination systems sponsored by The Center for Vocational and Technical Education.

3. A study of dissemination systems in the State of New York was released by the Title III Agencies in November, 1968.

4. The Listfax Corporation proposed a dial access telephone statewide educational information system.

5. The NYRCU was selected by the Division of Information Technology and Dissemination, U.S. Office of Education as the ERIC Input Agency for the State of New York.

6. Four drafts of the coordinated information network proposal were written. Two of these proposals were reviewed by the Deputy Commissioner of Education.

7. Representatives from the Special Education Instructional Materials Center were not invited to meetings where the innovation proposal was reviewed prior to its submission to the Deputy Commissioner of Education.

8. Very little communication had taken place between the Research Coordinating Unit staff and the staff in the Special Education Instructional Materials Center in the early stages of the innovation implementation effort.

9. Communication between the NYRCU research aide and the State Education Department bureau chiefs took place in private offices. No public meeting of these chiefs was held collectively to recommend the information system.

Conditions

1. The director of the State Library commands vast resources in the State Education Department.

2. Sufficient staff and other resources were available to mount this initial installation strategy for the Coordinated Information Center.

3. The decision by NYRCU staff to develop a "total" information system (rather than limiting the documents to vocational-technical education) necessitated communication and consensus from all State Education Department agencies affected by the coordinated information network.

4. A dissemination specialist for Title III programs had been hired by The Center for Planning and Innovation prior to the employment of the research aide in the NYRCU.

Analysis

The NYRCU staff perceived a need for a Coordinated Information Center. The need was supported by evidence from the Title III study of dissemination systems. This need was perceived to be

broader than vocational-technical education. Therefore, it became necessary to seek assistance and support from other agencies in the State Education Department. The director of the State Library was influential in promoting the innovation. The existence of a specialist for dissemination in the Center for Planning and Innovation (CPI) necessitated a close working relationship between the NYRCU and the CPI. A similar relationship should have existed between the NYRCU and the Special Education Instructional Materials Center. This original oversight in establishing a relationship between the two agencies (NYRCU and SEIMC) on this Coordinated Information Center has contributed to slow installation of the innovation.

Despite the piloting of the innovation and the external endorsement of the proposed center by U.S.O.E., the installation of the project moved slowly. Decision-makers in the State Education Department did not precipitate a decision on the adoption of this innovation. This proposal for a Coordinated Information Center, like the Listfax proposal, lacks an effective agenda for future action. Hopefully, future consideration of departmental or commercial innovations can be managed efficiently.

Research Findings Associated with the Installation of a Coordinated Information Network

Events

1. Four microfiche collections and four reader-printers were purchased by the NYRCU for local BOCES.

2. Communication links for facilitating microfiche use were established between BOCES and contributing school districts. Monthly meetings with school superintendents, the designation of a BOCES representative in each contributing school, and other techniques were used successfully to increase utilization of the microfiche.

3. The four BOCES directors receiving microfiche collections from the NYRCU were successful in influencing their boards to maintain the collections at their expense.

Conditions

1. The ERIC microfiche collections located in the 31 cooperating institutions are maintained with funds from several sources: The State Library System, The Center on Innovation and Planning, and the NYRCU.

2. Sufficient dollars and staff time were invested in each of the four BOCES to generate a "critical mass" of interest and enthusiasm for utilizing the microfiche collection.

Analysis

The willingness of the four BOCES to be considered as locations for the microfiche collections was stimulated by the $4,000 investment by the NYRCU in the collection and hardware. This financial incentive allowed the NYRCU staff to select BOCES which would complement the existing locations of ERIC microfiche collections. Sufficient lead time was available to allow BOCES directors to develop commitment among their board members and component school districts. As a result of this commitment, all four BOCES continue to maintain the ERIC collections at their expense.

Intra-network cooperation among the 31 cooperating institutions remains more of an expectation than a reality. Undoubtedly, the financing of microfiche from different sources contributes to this condition.

PRINCIPLES OF INNOVATION INSTALLATION

Evidence for the following generalizations was observed in this study. Many of these findings tend to support other studies on innovation adoption:

1. Legitimization of the innovation by influentials in the system must occur prior to complete installation.

Four drafts of the innovation proposal were written between July, 1968 and April, 1970. These were discussed and considered by various groups within the State Education Department. Yet the Commissioner of Education did not actually make a decision on the project during this length of time. The support of the director of the State Library acted as an influential force for the consideration of this proposal within the system. It is likely he will have a role to play in the implementation of any kind of coordinated information network.

2. The innovation must demonstrate a comparative advantage over competing activities before it is readily accepted.

For the most part, the innovation remained in the conceptualization stage with rewriting of the major ideas and meetings to consider implementation of the proposal in the State Education Department. No part of the innovation was implemented on a pilot basis within the department during this 31 month period of time.

Therefore, it was difficult to demonstrate advantages over other systems.

3. Incentives for adoption of the innovation should be clearly perceived.

Within the State Education Department, the Director of Research clearly perceived the role this coordinated information system could play in the identification of practical research problems, and he was actively promoting the proposal on this basis. The value of the coordinated information network for some other agencies of the department was not clearly perceived. An information system was not as tangible as a microfiche reader. The BOCES directors immediately recognized the value of the $4,000 worth of microfiche and equipment being offered to them to establish a cooperating institution within the information network.

4. The innovation installation should accommodate existing conditions whenever this can be done without limiting the effect of the innovation.

The best example of this happening in this study was the incident with the teachers' union which demanded and received released school time to visit the microfiche collection. Where unions exist they should be recognized and union leaders should be involved in strategies for installing innovations. The use of opinion leaders in user school districts to communicate information about the information system is another excellent use of the existing structure and personnel to install an innovation.

5. Persons affected by the innovation should be involved in the decision to accept, reject or modify the proposed idea.

This principle means more than the communication of information about the innovation. The new idea should receive a fair hearing in an audience of relatively unbiased decision-makers. Several groups of persons were involved in discussions of the proposal. But, the composition of these groups changed from meeting to meeting; at no time were the merits of the proposal compared with the Special Education Instructional Materials Center network in investments, nor were the interests of the Center for Planning and Innovation compared with the innovation during a meeting with high-ranking State Education Department officials present.

6. Innovations must be of sufficient magnitude to commit the adopting agency to the success of the program.

The New York Research Coordinating Unit (NYRCU) should be commended for the decision to commit the full impact of their

discretionary award funds to a targeted developmental project. It was the initial offer of the microfiche collections which caught the attention of the BOCES directors. BOCES agreed to continued maintenance of the collection and most have purchased additional equipment from their own budgets. This "critical mass" of research-based information and equipment, plus the enthusiastic support of the NYRCU personnel, have created a sense of urgency surrounding the utilization of these resources.

It may be an awareness on the part of State Education Department decision-makers of the pervasiveness of this coordinated information network which has delayed full consideration of this innovation. Time will reveal the fate of this idea. However, the researchers are left with the impression that the idea, in some form or other, will be implemented in the future with the full support of the New York State Education Department.

EPILOGUE

The final proposal for the innovation studied was submitted to the Deputy Commissioner of Education on April 1, 1970 as mentioned in Chapter 3. During the course of this study, no action was taken on that proposal. However, on November 12, 1970, the Deputy Commissioner suggested that representatives from the Division of Research, SEIMC, the State Library, and the Center for Planning and Innovation meet with the State Education Department's Elementary, Secondary, and Continuing Education Executive Council members to relate the essence of the dissemination problem and suggest logical action steps. That suggested meeting took place on December 2, 1970 and the following points of agreement were reached:

1. A single comprehensive system of information dissemination, diffusion and utilization is needed.

2. A compelling rationale with documentation must be presented to the State Legislature for funding.

3. A highly qualified person with knowledge about systems, information and management should be employed to direct the effort. This individual could be employed to conduct a feasibility study and recommend a strategy for implementation.

4. A committee consisting of representatives from the State Library, SEIMC, Center for Planning and Innovation, and Division of Research was designated to work with the director of the Center for Planning and Innovation to develop the charge, recruit a person, and put together a funding package to support him.

The committee mentioned in point 4 should identify three consultant firms which might be approached to assess the State Education Department's dissemination capability and suggest alternatives for establishing a coordinated information unit. Two of the consultant firms responded and the proposal from Systems Development Corporation (SDC) was accepted.

On January 25, 1971, the SDC representatives visited the State Education Department for the first time and initiated their study. The research aide was appointed as the Education Department project manager for the SDC study.

On March 19, 1970, a Request for Proposal (RFP) was received from the National Center for Educational Communications of the USOE soliciting proposals from State Education Departments for the establishment of State Education Information Centers. It is anticipated that the SDC project will be in final form in time to be utilized as a basis for proposal writing in response to the RFP from the USOE.

This fortunate timing may well result in the full implementation of the innovation studied. Federal funding would insure that implementation almost immediately while lack of federal funding might cause a delay in light of the current fiscal crisis in New York State.

It should be pointed out that the proposal prepared and sent to the Deputy Commissioner was never acted upon. Rather, it served as a catalyst for the State Education Department administration to seek an objective assessment of needs and suggested system design from outside the State Education Department. This perceived need to obtain an objective analysis points out the strong biases and vested interests which operate within a large bureaucratic structure such as the New York State Education Department.

Though federal funding was not granted, the State Education Department made a formal decision to implement a centralized information unit on January 19, 1972. This decision brings to an end the long process of innovation installation documented by this study.

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APPENDIXES

A. Cover Letter and Questionnaire

B. List of Cooperating Institutions

C. Communications

Appendix A:

Cover Letter and Questionnaire

The New York State ERIC Liaison Office in conjunction with The Center for Research and Leadership Development in Vocational and Technical Education at Ohio State University is undertaking a study of the decision process involved in the establishment of the New York State ERIC Service.

As the individual designated contact person for your ERIC collection and as the representative of your institution as part of a statewide ERIC network, we request that you complete this questionnaire and return it to this office in the enclosed pre-paid envelope.

We feel this study will help us better understand the nature of the "ERIC user" and the circumstances surrounding your decision to become part of an ERIC service for local educators. This information will be important to us as we further develop the network and institute services such as computer search techniques.

Your responses will remain anonymous and a copy of the completed study will be forwarded to you in September.

Thank you for your time and thought in completing this questionnaire.

Institution Number

QUESTIONNAIRE TO 32 COOPERATING INSTITUTIONS

This questionnaire should be answered by the supervisor of the ERIC microfiche collection. If you are not in charge of the collection, please identify the proper person by name and title and transmit these questions to him.

_____

_____

1. Please list the title of your immediate supervisor. _____

   _____

2. Why did you agree to open your ERIC microfiche collection to local public school teachers? (Rank reasons in order; number 1 = most important reason, etc.)

   ____ The collection was not being used by people in the institution.
   ____ The collection was purchased with public funds.
   ____ It has always been open to the public.
   ____ Other (please explain) _____

   _____

3. When is the ERIC microfiche collection used most extensively?

   (check one)
   ____ during school hours
   ____ after school hours

   (check one)
   ____ winter
   ____ spring
   ____ summer
   ____ fall

4. Where do the funds come from to maintain (purchase additional microfiche) the collection of ERIC microfiche? (Check all that apply.)

   ____ State library system
   ____ Federal grants or contracts
   ____ Local monies (student fees, etc.)
   ____ Affiliated institutions (schools that contribute students)
   ____ Other (please specify) _____

   _____

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5. What is the approximate level of use (include requests by mail or phone as well as in-house use) of the microfiche collection during an average week of the school year?

(check only one)

____ less than 5 persons per week
____ 5 - 10 persons per week
____ 11 - 20 persons per week
____ 21 - 30 persons per week
____ over 30 persons per week (indicate approximate number of persons ___)

6. Describe the "typical" microfiche user: For example, a college student, age 18-22, references for course work, or a curriculum specialist in a local school system who is developing instructional materials, etc.

_____

_____

_____

_____

_____

_____

7. Do you have cooperative arrangements with other institutions (such as Title III centers, colleges, etc.) for procuring or producing microfiche and hard copy? ____ yes, ____ no. If yes, please explain.

_____

_____

_____

_____

8. What public information methods have you used (such as a memo to department heads, notice in the newspapers, etc.) to advertise the availability of the ERIC microfiche collection? _____

_____

_____

Which of these public information methods do you consider most effective in reaching potential users? _____

_____

9. Have you conducted any in-house ERIC training sessions?

____ yes
____ no
____ plan to

10. To whom do you refer educational information questions when the ERIC system cannot provide relevant information?

_____

_____

_____

_____

11. Who is the most frequent user of the ERIC microfiche collection located at your institution? (Rank in order; number 1 = most frequent)

____ college or university professor
____ college or university undergraduate college student
____ graduate student, excluding public school teachers
____ public school teachers as a graduate student
____ public school teacher (local school use)
____ public school administrator
____ researcher
____ librarian
____ guidance counselor
____ high school students
____ other (please explain) _____

_____

_____

12. In your judgment, what have been the purposes of the ERIC microfiche searches? (Rank in order; number 1 = most important)

____ to complete course work at a college or university
____ to complete class assignments in a high school
____ to improve instruction in a college or university
____ to improve instruction in a high school
____ to prepare research and development proposals for federal or state funding
____ a literature review to be used in theses and dissertations
____ other (please specify) _____

_____

Appendix B:

List of Cooperating Institutions

ALBANY, N.Y. 12203
Mrs. Audrey R. Graham
College of St. Rose Library
392-396 Western Avenue

ALBANY, N.Y. 12203
Mrs. Fran A. Miller
University Library, Education Area
State University of New York
1400 Washington Avenue

BELMONT, N.Y. 14813
Mr. William F. Farnsworth
BOCES
6 South Street

BROOKLYN, N.Y. 11210
Mrs. Joyce K. Dahl
Social Science-Education Div.
Brooklyn College Library
Bedford Ave. & Avenue H

BUFFALO, N.Y. 14222
Mr. Charles S. Underhill
Butler Library
State University College
1300 Elmwood Avenue

BUFFALO, N.Y. 14214
Miss Barbara A. Dullea
Reference Department
Lockwood Memorial Library

CORTLAND, N.Y. 13045
Mr. David H. Kreh
Teaching Materials Center
Cornish Hall D-206
State University College

ELMIRA, N.Y. 14901
Mr. Peter L. Fenton
Gannett-Tripp Learning Center
Elmira College

ELMIRA, N.Y. 14905
Mr. Jack Weinstein
Director of Library Services
951 Hoffman Street

ENDWELL, N.Y. 13760
Mr. Robert Radick
BOCES
3116 Lawndale Street

FREDONIA, N.Y. 14063
Mr. Gary Barber
Reed Library
State University College

GENESEO, N.Y. 14454
Mr. William T. Lane
Milne Library
State University College

HORSEHEADS, N.Y. 14845
Mrs. Charlotte Mappus
Regional Education Center
703 South Main Street

MIDDLETOWN, N.Y. 10940
Mr. Wm. Calabrese
Occupational Education Center
Fortune Drive West
RD #6

NEW PALTZ, N.Y. 12561
Miss Lucille A. Brown
Assistant Librarian
State University College
Library

NEW YORK, N.Y.
Reference Librarian
Bank Street College of Education
69 Bank Street

NEW YORK, N.Y. 10016
Mrs. Dorothy Christiansen
Center for Urban Education
105 Madison Avenue

NEW YORK, N.Y. 10003
Mrs. Barbara S. Marks
Education Library
New York University
4 Washington Place

NEW YORK, N.Y. 10027
Mrs. Florence Wilkinson
Reference Supervision
Teachers College Library
525 W. 120th Street

OSWEGO, N.Y. 13126
Mr. Stephen Torok
Penfield Library
State University College

PATCHOGUE, N.Y. 11772
Miss Mary Frances Moore
Suffolk County Regional
Education Center
20 Church Street

PORT HENRY, N.Y. 12974
Mr. Lawrence A. Wojcik
Essex County Area Education
Center
BOCES

POTSDAM, N.Y. 13676
Mrs. Alice F. Kauffman
College Library
State University College

ROCHESTER, N.Y. 14627
Miss Margaret Perry
Education Library
University of Rochester

ROME, N.Y. 13440
Mr. George Purple
CHE-MAD-HER-ON
200 East Garden Street

STATEN ISLAND, N.Y. 10301
Mr. Clifford R. Johnson
Richmond College Library
130 Stuyvesant Place

STONY BROOK, N.Y. 11790
Mr. Jack Pontius
Reference Department, Library
State University College

SYRACUSE, N.Y. 13210
Miss Patricia J. Hallock
ECCO (Educational and Cultural
Center)
700 East Water Street

SYRACUSE, N.Y. 13210
Mr. Donald K. Thompson
Room 206, Carnegie Library
Syracuse University

WILLIAMSVILLE, N.Y. 14221
Miss Stephanie Christopher
Western New York School
Development Council
27 California Drive

YORKTOWN HEIGHTS, N.Y. 10598
Mr. Herbert Liberman
BOCES
Building #6
845 Fox Meadow Road

Appendix C:

Communications

STATEMENT BY TITLE III TASK FORCE

Concerning the Need for a Standardized Information Classification and Retrieval System For Educational Agencies in New York State

In our work at the regional educational centers now operating under the direction of the Center for Planning and Innovation, we have become particularly sensitive to the ways in which our efforts would be strengthened with the existence of a functional educational information network. This network would make it possible for all of us to draw, quickly and easily, on the standard sources of information useful for planning as well as on noteworthy experiences, programs, and developments in each region. A task force has been created, staffed by people from the various centers, for the purpose of surveying the possible content and dimensions of such a network.

In carrying out this mandate, and in comparing notes on the many sources of information on which we all depend, our task force has been reminded, immediately and forcibly, of the fact that there is no common classification pattern for the various standard information retrieval systems. In almost all cases we can draw on the resources of the State Library for information. But familiarity with the existence and availability of these standard sources is not yet common to all our staff people. More important, familiarity with the specific classification patterns of all these sources is rarely available in any single regional center staff.

Standard classification and storage procedures within all SED bureaus, built upon the ERIC format as a model, would be of inestimable value to us and to the regions we serve. It would make possible a degree of common knowledge and a set of common procedures which would, we are confident, lead to wider use of the information available as well as to greater efficiency in securing it. Ideally, this standard system would be developed and administered from some central access point, perhaps an office staffed by educators but within the State Library organizational structure. This would provide a truly meaningful interface between user and resource.

We therefore urge that State Education Department personnel be assigned the task of developing such a standard classification system, building on the ERIC format, which will enable easy access to a much broader range of information. With the new definition of our role, the centers have the manpower and the incentive to utilize planning information to a far greater degree than formerly.

It remains now to develop an access system which will make the information readily and easily available. We anticipate opportunities in the coming months for staff training, and feel confident that such a classification system would have high priority in our programs.

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12224

September 10, 1969

Dear

The New York Research Coordinating Unit is acting as an ERIC service unit for the New York State Education Department and ultimately all local educational agencies through a network of 26 cooperating institutions which house complete ERIC collections.

The unit offers many services including search and microfiche reproduction.

Because of this active commitment and interest in ERIC and all clearinghouse activities we would appreciate being placed on your Newsletter mailing list.

If you desire any information concerning our service or future plans please feel free to contact me.

Sincerely,

Research Aide, NYRCU

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The University of the State of New York
THE STATE EDUCATION DEPARTMENT

To: Director, Division of Research

From: Research Aide

Subject: State Education Department ERIC Input Agent

In reference to the memo of July 11, 1969 from the Associate Commissioner for Research and Evaluation, I would offer the following observations and recommendations.

It appears that there are three major ERIC input sources from which a State Education Department ERIC Input Agent would obtain pertinent documents. These three sources will require different acquisition methods.

1. State Education Department documents published by the Department.

   The acquisition of these materials can be accomplished through an arrangement with the Publications offices which would require that two copies of every document published be forwarded to the ERIC Input Agent. I spoke with Mr. Meservey and he assured me that this arrangement could be made effective immediately.

2. Documents produced outside the State Education Department by other educational agencies or private institutions while under contract to the State Education Department.

   The Bureaus or offices acting as the contract agent for the State Education Department could be required to forward two copies of each contract-produced document to the ERIC Input Agent along with a recommendation as to which ERIC Clearinghouse it should be sent.

3. Locally produced documents such as those produced by Local Educational Agency, BOCES, or other regional centers while under no specific obligation to or affiliation with the State Education Department.

   This source is the most difficult to cope with but can be efficiently covered if a plan such as that being implemented by the Bureau of Occupational Education Research is adhered to and expanded.

The Bureau of Occupational Education Research has enlisted the cooperation of 25 institutions containing complete ERIC collections and has installed four ERIC collections in BOCES locations to supplement those previously existing. Briefly, the purposes of this cooperative arrangement are twofold: (1) It allows for and makes available the complete ERIC collection to local practitioners through decentralized locations. Search services, bibliographies and other documented resources are still prepared at the Bureau of Occupational Education Research but the availability of the collections coupled with print-out capability make the information available in meaningful form on the "firing line." (2) Each ERIC location has identified one individual who will act more or less as a "county agent" who has field contacts and is aware of local problems and developments. Most ERIC locations have also identified their affiliated educational organizations. This arrangement gives the Bureau of Occupational Education Research a direct link to the local practitioner and his problems so that information needs and priority areas can be anticipated. It also puts the Bureau of Occupational Education Research in direct touch through the "county agent" with locally produced materials.

This information input, output, two-way communication system is a natural means through which locally produced materials of general interest might be incorporated into the ERIC system.

The Bureau of Occupational Education Research ERIC information services will be fully operational by September and it does not appear that additional personnel or facilities would be required to incorporate the ERIC Input Agent function (covering all three sources) into this operation.

It should be pointed out that the proposed Statewide Unit for Resources in Education (SURE) could be designed to handle all ERIC-related operations in addition to other existing, less formal information sources so as to provide a "one stop shop" for educators. This ultimately must be the goal of the State Education Department in this area and it conforms to the feelings of Dr. Burchinal, Director of the Division of Information Technology and Dissemination at the United States Office of Education and with the recommendations made by the Intergovernmental Task Force on Information Systems in April, 1968.

The ERIC system has expanded its function through the monthly publication *Current Index to Journals in Education* which currently covers 216 journals in the field of education. The ultimate success of the ERIC operation is dependent upon a highly developed acquisition plan and in this state where so many educational innovations and so much resource material is generated, it becomes apparent that the State Education Department must centralize the ERIC acquisition function.

The only apparent disadvantage of centralizing the State Education Department ERIC acquisition function with the Bureau of Occupational Education Research and ultimately within the proposed SURE is that several offices of the State Education Department may already have an existing arrangement with their appropriate clearinghouse in regard to acquisition for the ERIC system.

The following steps are recommended for investigating the feasibility of, and, if feasible, establishing an ERIC Input Agent.

1. A memo/questionnaire should be sent to all State Education Department Bureaus or offices to ascertain:

    a. The extent to which they produce potential ERIC input materials.

    b. Whether they have an established method of submitting their materials or contractually produced materials to ERIC through a particular clearinghouse.

    c. Whether they secure locally produced materials on a regular basis.

    d. Whether they would prefer a centralized State Education Department ERIC Input Agent.
    (Assuming the ERIC Input Agent is acceptable)

2. Incorporate this function into the Bureau of Occupational Education Research ERIC operation and secure a distinct mailing address for this operation. (State Education Department ERIC office)

3. Route two copies of all State Education Department published materials to the above address. (As mentioned previously, this has been discussed and can be easily implemented.)

4. Require that all State Education Department offices forward contractually produced materials to the input agent at the above address. The only internal (Bureau of Occupational Education Research) adjustments I foresee are:

    1. Development of a simple log system for recording materials received and their disposition.

    2. Develop a small card to be attached to materials sent to the input agent by the State Education Department offices on which the appropriate or preferred clearinghouse would be identified.

3. Strengthen and broaden ties with local educational agencies.

After speaking with the Publications officer, it is clear that a mixed system whereby most offices forward their materials to an input agent but some deal directly with the clearinghouse would be extremely undesirable. The operation once implemented, must be adhered to Department-wide.

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12224

May 22, 1969

The Bureau of Occupational Education Research, New York State Education Department, is presently extending its information dissemination capability. Part of this extension is the coordination of information collections throughout the state, determining whether certain collections of data may be made available for public use.

We have learned that your institution has a complete collection of ERIC microfiche documents listed in the periodical, *Research in Education*. Since a large part of the research presently performed in occupational fields is published in ERIC through the Clearinghouse for Vocational and Technical Education at Ohio State University, and since the Vocational and Technical documents represent the largest class of documents represented in *Research in Education*, we feel that access to ERIC collections for as many people as possible would be of major importance in the dissemination and implementation of occupational education research findings.

Accordingly, we request your assistance in this program. We would like to know whether your collection is open for public use. If not would you consider making it available? Our hope is that you will permit our office to make known to vocational educators in your area that your collection may be used by them. In addition, we would like to deposit with you a collection of documents published by our office (there are about 15 of these in print at the present time) for use by these educators.

We would greatly appreciate your cooperation in this endeavor. Please respond using the enclosed form which may be mailed in its companion postage-free business reply envelope.

Very truly yours,

Research Aide, NYRCU

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☐ We are willing for you to make known that our collection is available for use, and we will accept your deposit of Bureau of Occupational Education Research publications.

☐ We are not able to open our collection to the public.

Please use this space for further remarks:

Signature _____

Title _____

Institution _____

ERIC USER NOTES

Prepared in the Division of
Information Technology & Dissemination
National Center for Educational Research and Development
U.S. Office of Education

Occasional Letter No. 4 December 15, 1969

Background

ERIC USER NOTES represents an effort to keep users of ERIC informed about new dissemination efforts with emphasis on ERIC products and services and plans.

ERIC USER NOTES is sent to all organizations having a standing order with the ERIC Document Reproduction Service to receive all documents announced in *Research in Education*. ERIC USER NOTES is sent to persons who have been identified by their organizations as the key contacts for ERIC services. When a specific individual has not been named, we will send ERIC USER NOTES to the organizational address. ERIC USER NOTES also goes to key persons in State educational agencies, whether or not these agencies have a standing order at EDRS.

New York State Information Network

Also enclosed is a pamphlet prepared by the Bureau of Occupational Education Research, New York State Department of Education, to describe a network of 26 centers that are prepared to offer information services based on ERIC collections. Each of the 26 organizations have maintained their own ERIC collections. The State Education Department has taken the leadership in organizing the centers in a State-wide system. Perhaps the New York State Model may suggest lines of development in your State.

For details about the New York State development write to:

Director
New York State Research Coordinating Unit
ERIC Information Services
Room 468 Education Building Annex
State Education Department
Albany, New York 12224
Phone: 518 474-6386

To: Director, NYRCU

From: Research Aide, NYRCU

Date: June 5, 1969

Subject: Expenditure of the $20,000 Discretionary Award/A Cooperative Educational Resource System

As you know, we have found it extremely difficult to effectively disseminate our research and program materials while responding to numerous requests from educators for ERIC searches and for specific documents. Due to these and other variables which compound the dissemination problem, we have taken three major steps:

1. Involve other Federal Program Officers and the State Library in the development of a Statewide Educational Resource System.

2. Submit a proposal to The Center for Vocational/Technical Education for administrative assistance in developing workable, effective subcenters throughout the state. (This proposal was accepted.)

3. Formulate policy, methods and procedures for insuring that we are aware of and fulfill the information needs of vocational educators throughout the state.

The discretionary award was utilized to accomplish steps 2 and 3 above and a brief description of what has been accomplished thus far is as follows.

All existing ERIC collection locations in the state were contacted and asked if they would allow us to refer educators in their area to them so that they might utilize their collection. These locations were also asked if we could locate our RCU research publications at their sites for distribution purposes. The 10 locations which have agreed to this as of this date are circled in black on the attached map.

The actual expenditure of the discretionary award was accomplished through the establishment of complete ERIC microfiche collections and reader-printers at BOCES in those geographic areas where there was no ERIC collection already located and where a potential demand exists. These four locations are shown in red on the attached map.

A detailed budget showing all expenditures of the $20,000 is also attached.

It is our belief that bringing the resources to the local personnel is a major step in answering many of their problems.

It will be necessary for us to educate and train local personnel in the use of the ERIC collection so that it might be fully utilized. The first step toward this end will involve publicizing the existence of the several locations. This will be done in cooperation with other program officers so as to avoid duplication and to provide the widest possible coverage.

We are planning to designate one person at each location to serve as a "listener/interpreter" to report to us periodically on what local educators are perceiving as the "problems" so that we might anticipate their information needs and create and fund research which provide information where none now exists.

We have not actually created any new system; we are only utilizing what already exists and this was done intentionally so as to avoid any future conflict with a comprehensive educational resource system involving much more than the ERIC system which is now in the planning stages at the State Education Department.

We believe that the success of our program depends on the effectiveness of a well planned public relations and advertising campaign designed to make local educators aware of the wealth of information currently available to assist them in problem solving and decision making.

We further believe that this system which utilizes a "listener/interpreter" to provide constant feedback, will prove to be the most effective means of dealing with the information gap that now exists.

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Albany, New York 12224

February 3, 1970

To: Research Aide, NYRCU

From: Specialist, Center for Planning and Innovation - Room 860

Subject: Request for Information on and Plans for BOCES Activities

A major part of my work at this time is concerned with a look at regionalism in education in New York State and the directions in which we appear to be going in this respect. Since the BOCES area has been identified for some purposes as a region, it seems desirable to take a look at BOCES programs as a point of departure.

I am presently compiling information from a variety of offices responsible for programs or services being provided or planned through BOCES. This work is being carried on through this office co-operatively with and guided by the Office of School District Organization.

I would appreciate your efforts in providing me with a written statement on the subject of programs or services provided or planned through your office and their impact on BOCES activities.

I might suggest a three to six page statement which would provide:

1. Some background or historical discussion of the topic.

2. The current status of programs being conducted, e.g., exemplary programs, levels of participation, approximate funding levels, etc.

3. Plans or projections for the future which are concerned with the role that BOCES might play in the development and expansion of programs or services supervised or proposed through your office.

You are urged to put major emphasis in this report on item #3 above.

It is intended that the materials submitted will be compiled, reviewed and incorporated into a report which may properly reflect

the operations and aspirations of SED offices currently assisting schools through BOCES.

If you so desire it would be appropriate to exceed the number of pages required or follow a format different from that outlined.

Your cooperation will not only provide you with an opportunity to outline your accomplishments and aspirations but is essential to the development of an accurate and reliable statement on the subject of the BOCES effort.

If you can complete this report and make it available to me as early as February 13, your work in this regard would be appreciated.

To: Specialist, Center for Planning and Innovation

From: Research Aide, NYRCU

Date: February 5, 1970

Subject: Request for Information on and Plans for BOCES Activities

Attached you will find an interim report of the ERIC Service operated by this office. Notes have been added in those cases where further activity has taken place.

In addition to the interim report there are two statistical reports which illustrate demand placed on the service for the months of December and January.

The attached documents should give you sufficient background and status information.

One significant development that is not mentioned in the materials is that the United States Office of Education through their publication *ERIC User Notes* (December, 1969) described our operation and attached to their publication a copy of our brochure to the field. Further, the article suggested the investigation of the model developed in New York State as a possibility for development in other states.

In light of the above, and our ultimate goal of educational resource consolidation in New York State, I feel that the BOCES and the Regional Centers can and should play an important role.

You will note that five BOCES are already involved in our service. The remaining BOCES can be of great value as part of the input function since comprehensiveness is the key to success for maintaining a centralized educational information system.

The United States Office of Education has assured me that they can and will absorb all documents we feel are significant or useful for New York State educators. Given that fact, the ongoing acquisition of documents (research, innovative or project-generated) is the problem. BOCES are in a position to reach local educators directly. Since centralization of the resources requires maximizing the access distance for the user, the BOCES could be the interface between user and information. We are attempting to cultivate this type of activity in our cooperating institutions be they BOCES, Regional Center of University. The activity entails definition or clarification of user information needs prior to system entrance. It can and should also include assistance in applying or utilizing information retrieval.

It is conceivable that BOCES could house terminals linked to a computer base with information storage. This will depend on the directions taken by the proposed regional computer centers.

In terms of information input, output, screening and utilizations, the BOCES are in a position to play a key role. I think that only budgetary limitations can keep them from filling that role.

If you need further information feel free to call (GR-46388) or stop in.

Good luck, the bureaucratic beast will move, it only requires prodding, prodding and prodding.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1972 — 755-440/6